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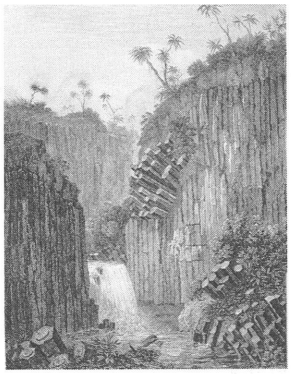
SLA
Connecting People and Information

SciTech News



In the late eighteenth-century a controversy raged among geologists as to the origin of rock formations known as columnar basalt. Many geologists argued that basalt was an igneous rock, produced by volcanoes. Others thought that it was an aqueous rock, deposited from water. Alexander von Humboldt was of the "aqueous" school when he lived in Germany, but after visiting the volcanoes of Ecuador and Mexico, he began to have his doubts. The cover illustration shows the columnar basalt at Regla in Mexico, as observed by Humboldt in 1803, and described by him in his *Researches, concerning the institutions & monuments of the ancient inhabitants of America* (London, 1814). The close proximity of basalt and active volcanoes strongly suggested that the basalt was volcanic. (Photo and caption courtesy of the Linda Hall Library of Science, Engineering, & Technology, Kansas City, Missouri.)

Feature Articles

News from the Sponsoring Divisions

Departments

Index of Advertisers

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From the Editor

Bonnie Osif

Another annual conference ahead of us. Nashville is a great city for a conference. I've been there a few times before and must say there is a lot to see and do. And the food, always something I pay attention to, is great! The conference looks to be very interesting with some great programs scheduled. Do note the programs listed in the pullout section and attend as many as you can. I know I plan to.

The featured division this issue is the Science-Technology Division. ST is an interesting division since it is the parent division for many of our more subject-specific divisions and sections. In some sense that means the focus isn't as clear. I'm a member of both Transportation and Engineering Divisions and I know exactly what they are. Their names describe their purpose. ST, on the other hand, is more general and its purpose might seem more nebulous. I actually see that as one of its strengths. There are a number of members from all types of libraries. Ideas can be shared and the multidisciplinary nature of the group is exciting. I always recommend that science librarians join ST and then a specialized division. They will benefit from each.

With such a diverse membership, it was both a pleasure and a challenge to find articles for this issue. Susan Makar has written an informative article about NIST (National Institute of Standards and Technology). I find the NIST Web site a treasure trove of information and find her article to be a great introduction to the institute. We also have a profile of Catherine Lavallee-Welch, librarian at the University of Louisville.

As usual, our columnists have come up with interesting and informative pieces on this issue's theme. Dave has found so many wonderful Web sites he will continue the column next month! Dr. Noit provides a timeline of science and technology with a short commentary. It is amazing how far we have come. Equally amazing is how far we have to go. I'm always amazed at the number of expressions and items that have changed since I was college age. I know teaching college students can keep one young and I love my job. But there are days when I realize how much things have changed and it makes me wonder. I mean, I remember taking notes on index cards. There was nothing wrong with that. Copiers were great and when I had the option—and the change!—I began to copy pages and underline. But now—insisting that everything must be electronic so it can be "copied and pasted"! Really! At times like that, I do realize there is a slight gap between me and my students. Dr. Noit provides some framework for the evolution of our science and technology through the centuries. I wish it had been longer since there are so many inventions and discoveries. Earl and Ellis once again give us a list of publications we should review.

I would like to thank the many people who help with *STN.* The columnists, Earl, Dave, Ellis, and Dr. Noit work so hard to provide the information for you. Ann has been a wonder keeping the books, paying the bills, and being a great listener for my complaints. She will "retire" as the business manager and ST treasurer this year and I will miss her. Barbara Parkinson is also retiring after more than a decade working with *STN* as business manager and subscription manager. I've appreciated getting to know her via phone and all of the wonderful work she has done. Thanks from all of us, Barbara. If you see any of these people in Nashville, give them your personal thanks.

In an interesting case of parallel worlds, I recently caught my class ignoring a word in two of their required readings. The word was Luddite. They needed to know what it meant to understand the article, but somehow forgot to look it up. We talked, as they say! Well, thanks to James Manasco, I now know who the norns were! I greatly appreciate (and don't deserve) his very kind words, but I'm always looking to learn something new and sure did this issue! Thanks to all of the chairs for their support and humor.

I hope to see you in Nashville. Note the special invitation below from Linda Hall Library who provides our covers each issue. Stop by and say 'thanks.' Until next issue, all of the best.

Bonnie

Reception at SLA!

Linda Hall Library of Science, Engineering & Technology invites *Sci-Tech News* readers to a reception at the SLA Annual Conference on Sunday evening June 6th from 6:00 - 7:30 p.m. in the Hermitage C Room of Gaylord Opryland Resort and Convention Center.

Hope to see you there! Kathy Alshouse

The Research Library at the National Institute of Standards and Technology: 2003 Federal Library of the Year

By Susan Makar, Research Consultant and Web Manager
Information Division, NIST

The year 2003 was a very exciting and challenging year for the Research Library at the National Institute of Standards and Technology (NIST). In early 2004, library staff had the opportunity to celebrate their achievements when they learned the library was named Federal Library of the Year for 2003 by the Federal Library and Information Center Committee (FLICC) of the Library of Congress. The Research Library was "recognized for its technological innovations and comprehensive knowledge management systems that proactively provide the tools necessary to support new programs, superior customer service and the agency mission" (see *News from the Library of Congress*, March 9, 2004, http://www.loc.gov/today/pr/2004/04-049.html). Some of those innovations and knowledge management systems are described in this article.

FedLib2003= l to r, FLICC Executive Director Susan Tarr, Librarian of Congress Dr. James H Billington, Information Services Division Chief Mary Deirdre Corragio, Electronic Information and Publications Group Lead Barbara Silcox, Acting Technology Services Director Dr. Belinda Collins. Photo by Robin Smith at FEDLINK

At the same time, Wilma ("Sissy") Riley, a NIST Library technician, was named 2003 Federal Library Technician of the Year by FLICC. Sissy was recognized "for her dedication to service excellence in support of the mission of the NIST Research Library and the core values of the NIST Information Services Division" (see *News from the Library of Congress*, March 9, 2004, http://www.loc.gov/today/pr/2004/04-049.html).

FLICC award winners from the NIST Research Library, as well as award recipients from other federal libraries, were honored at the twenty-first annual FLICC Forum on Federal Information Policies March 25 at the Library of Congress in Washington, D.C. They received their awards from Dr. James H. Billington, the Librarian of Congress, and were guests of the forum.

Background

The National Institute of Standards and Technology (NIST) is a nonregulatory federal agency within the U.S. Department of Commerce. Its mission is to develop and promote measurements, standards, and technology to enhance productivity, facilitate trade, and improve quality of life. NIST is the home of two Nobel Prize winners and renowned for its research on the sinking of the Titanic, and has made contributions to the investigations of the 9/11 terrorist attacks on the World Trade Center.

The NIST Research Library's mission is to support and enhance NIST's scientific and technological community through a comprehensive program of knowledge management and superior customer service. The library's primary customers are the researchers in the NIST Laboratory programs. The laboratories conduct research in the physical and engineering sciences, including building and fire research, chemistry, electronics and electrical engineering, information technology, manufacturing engineering, materials science, and physics.

The Research Library, located on the main NIST campus in Gaithersburg, Maryland, serves a population of 2,700 and has a collection of more than 300,000 items. The library has a staff of fifteen. It is one of three working units within the Information Services Division (ISD). The other units focus on NIST publications and the museum program. All members of ISD work together on teams and special projects, bringing together a broad spectrum of expertise and talents.

NIST Virtual Library (NVL)

The NIST Research Library has long had a strong Web presence in the form of the NIST Virtual Library (NVL). The NVL is a critically important information tool offering NIST scientists and researchers access to valuable databases and full-text electronic

journals. The library's public Web site (http://nvl.nist.gov) provides access to the library's online catalog, links to NIST Web resources, and information and news about the Research Library.

First launched in 1994, the NVL underwent an extensive redesign in 2001. At that time, a content management system was implemented, allowing about twenty staff members within ISD to contribute to the development and maintenance of the Research Library's Web site. Customer input, in the form of usability testing and focus groups, helped Research Library staff redesign the NVL as a much-improved navigation system with better access to valuable scientific resources.

Laboratory Liaison Program

As the 2003 Federal Library of the year, FLICC commended the NIST Research Library staff on its Laboratory (Lab) Liaison Program, which promotes collaboration between NIST researchers and the Research Library. This program is intended to offer the NIST Laboratories one point of contact in the Research Library for questions, in-depth research, collection development suggestions, and issues about accessing resources. The lab liaisons currently serve seven NIST Laboratories and three NIST programs. Plans for expanding the program are under way. The program has a strong emphasis on marketing, and the lab liaisons frequently use the monthly Division newsletter, *ISDirections*, to market library products and services and educate the Research Library's current and potential customers.

In existence for barely more than a year, the Lab Liaison Program has accomplished much during this short period of time. The lab liaisons, in collaboration with researchers in their assigned labs and divisions, have developed a list of core journals. Core journals are protected titles during times of budget constraints and possible cuts. They perform collection development with the helpful input of subject specialists in the labs. The lab liaisons are currently working on in-depth division profiles, and they track new employees and follow up with them to ensure that new NIST staff members have the resources and services they need from the Research Library.

NIST Integrated Knowledge EditorialNet

Members of the Research Library staff are currently collaborating with other members of ISD on the design and development of a NIST-wide knowledge management system, the NIST Integrated Knowledge EditorialNet (NIKE). NIKE is a broad, ambitious effort to gather, organize, and make available all of the products of NIST's research. When launched in 2004, NIKE will consist of an all-electronic manuscript submission and tracking system for authors, a database containing metadata for NIST-authored publications, an archive of manuscripts, and a digital library of published documents connected to the Research Library's online catalog.

NIKE is being made possible through the efforts of many. ISD staff has worked with IT experts to define technical requirements that meet the business requirements. Lab liaisons have worked closely with NIST researchers/authors to verify citations and update records being migrated from the old publications database to the new system. Most importantly, ISD customers have been consulted at various times in the planning and requirements phases to determine what they want and expect from NIKE.

WiFi Hotspot

In 2003, the NIST Research Library became the first and only NIST WiFi Hotspot. NIST researchers are able to check out preconfigured wireless laptops for searching the online catalog, reading and sending e-mail, and performing database and electronic journal searches on the NVL. The portico just outside the glass wall on the east side of the Research Library has become a popular spot for wireless laptop users on a comfortable, sunny day.

Research Library Advisory Board

The NIST Research Library learns much about its user community through the Research Library Advisory Board (RLAB), established in 2003 to enhance two-way communication between NIST researchers and the Research Library. The role of RLAB is to communicate customer needs to library management, recommend directions for library collections and services, and communicate information about library products and services to the NIST community. RLAB members have embraced their role, becoming active advocates for the Research Library.

Summary

A large part of the Research Library's success in 2003 was made possible through careful planning and by listening closely to Library customers. In being named the 2003 Federal Library of the Year, the NIST Research Library recognizes the valuable input it receives from its customers, the researchers, scientists, and support staff at NIST. This customer-focused approach will continue to serve the NIST Research Library well as it develops future innovative systems, services, and applications.

Interview With the Blogger: A Conversation with Catherine Lavallée-Welch

By James E. Manasco

When Bonnie Osif, the editor of *Sci-Tech News,* approached me about doing a profile of a Sci-Tech Division member for this issue, one name jumped out immediately: Catherine Lavallée-Welch. My reason for thinking of her, of course, was the notice I've seen given to her EngLib blog. Then again, maybe it was because I had just received an e-mail from her. Or, perhaps, it could have been because she happens to be a member of my home chapter.

Catherine has been the electronic resources librarian at the Kersey Library of Engineering, Physical Science, and Technology at the University of Louisville (Kentucky) since June 2000.

JM: So let's get started. Where did you grow up? I'm pretty sure it wasn't Kentucky, judging by the funny accent. What were the times like then? What was the most important event you remember?

CLW: My funny accent? Have you listened to yourself lately? But, yes, I'm not from Kentucky. I grew up in Montréal, Québec, Canada. The primary thing going on back in the seventies and eighties was the movement for the sovereignty of Québec. Politics really dominated those decades, with the clash between two very intelligent but very different political leaders, Pierre Elliot Trudeau in Ottawa and René Lévesque in Québec City. I am very proud of being *Québécoise*.

JM: What was the education system like when you grew up? What did you do in high school?

CLW: The education system is a bit different from here. We have six years of primary school followed by five years of high school. Two or three years of what we call college, to prepare you for either university or a vocational track, follow this. My main hobby during my high school/college days was writing. I worked on student newspapers and was on academic challenge teams. I also dabbled a bit in photography.

JM: Did any particular teacher or relative influence you in your selection of a university/career path?

CLW: I majored in history as an undergraduate with a minor in records and archival management at the Université du Québec à Montréal. In high school, I had been good in science, but not so good in math. I had an idea of going into archival science since I had an uncle who was an archivist for the City of Québec. He was a big influence on me—he did such interesting things! I got contract work as a record manager, though, not archives; and, honestly, I found it pretty boring. I then decided to go for a master's degree, but in library science. The job prospects seemed to be better.

JM: Where did you do your graduate work? What was your course of study?

CLW: I did my M.L.I.S. at the École de biliothéconomie et des sciences de l'information of the Université de Montréal. That's the only French-language program accredited by the ALA. I was motivated to become a librarian primarily because I was interested in a lot of subjects and I'm by nature a very curious person. I thought it would be a good job for someone like that. Of course, my course of study focused mostly on more technical aspects, and now I work every day with the public!

JM: What were your early experiences in librarianship?

CLW: Well, as I was telling you, I did about a year of work as a records manager first. Some of it turned out to be more like data-entry jobs. During my master's degree work, I got involved with a project for an online documentation center for French-language materials. That center was first developed in Wallonie, Belgium. To support the Québec side, I co-founded a co-op where I acted a bit as an information broker. Along with doing contract work in Belgium with the center, I also did work in France. One of those projects was a kind of a crock, though. In the south of France, I worked for a … gentleman who found a way to get grants by employing four young Québécois through an intergovernmental program. He made money, but we didn't. Anyway, it did lead to me doing some work at the Infothèque of the Pôle universitaire Léonard de Vinci, a private higher-learning institution in Paris, for a summer. That was a great experience. I finally worked on an Internet/Intranet project for a not-for-profit association just before coming to the States.

JM: How did you come to Louisville and to Electronic Resources librarianship?

CLW: I came here for love. No, really! I met my future husband at a pulp magazine convention in Ohio, PulpCon, back in, oh, 1998. I was one of three single women among 300 men! My first pulp interest was in the Doc Savage character and I had a Web site (interviewer's note: check out http://homme.docsavage.net/) dealing with the French translations of those magazines. My future husband had his own Doc Savage site. We knew each other's sites, but did not know each other. We met and kept in touch. In 1999, we saw each other again in Dayton, Ohio, and started dating. We got married in 2000 and I started at my job a few weeks after the wedding. We have a 3-year-old daughter and, yes, she does have her own blog. It's where we keep in touch with the grandparents and extended family.

Science Librarian Blogs
(for further exploration)

EngLib: for the scitech librarian
Catherine Lavallée-Welch
University of Louisville
http://englib.info/

Confessions of a Science Librarian
John Dupuis
York University
http://jdupuis.blogspot.com/

The (sci-tech) Library Question
Randy Reichardt and Geoff Harder
University of Alberta
http://stlq.info/

JM: Now, back to the work world. What does a typical day at work look like for you?

CLW: It starts with e-mail. I read a LOT of e-mail and forward what would be good for colleagues and faculty. I usually attend meetings every week, since the U of L Libraries are team based and I serve on a few. Otherwise, I also recommend for purchase and troubleshoot databases and other electronic resources. This spring, for example, I worked on trying to find a new provider for INSPEC. I also manage our computer lab/classroom, Web site, and all other technological issues. Along the way, I also do reference, both in person and virtually, and some teaching.

JM: What do you like most about your job?

CLW: What I like about the academic sector is that it gives you a little more freedom to play with stuff, to experiment. I also get a kick out of helping people and seeing the "I get it now!" look in their eyes.

JM: OK, sounds good. But what do you like least about your job?

CLW: My present situation is fine; I really like being in a small library where I can be more of a jack-of-all trades. Though the downside to that is being a bit cut off from the action of the main library. In the day-to-day situation, I really don't like it when I'm unable to help somebody.

JM: After all your experiences, what interests do you have in the sciences?

CLW: I really didn't come with a lot of experience in the sciences when I came to Louisville; most of it came when I was working for the co-op. I'm still developing my skills in the sciences, though I do have some interest in the historical study of it.

JM: How did you get involved with blogging? Why did you create the EngLib blog?

CLW: A blog is really just a digital diary. But it is done with pretty easy technology to use so anyone can publish easily and quickly on the Web, even without having to know HTML to do so. The reason I started the EngLib blog was that I was receiving a ton of paper and electronic mail about job-related stuff. Too much stuff! This was a way to make sure I read all that information and stay up-to-date. And I also wanted to help other librarians; blogs can be community builders.

What is a blog?

A blog is basically a journal that is available on the web. The activity of updating a blog is "blogging" and someone who keeps a blog is a "blogger." Blogs are typically updated daily using software that allows people with little or no technical background to update and maintain the blog. Postings on a blog are almost always arranged in chronological order with the most recent additions featured most prominently.—from www.matisse.net/files/glossary.html

JM: What has been the response to your blog?

CLW: I've received a lot of good feedback. I keep seeing the blog mentioned in a lot of places. Some readers seem to like that I don't spend a lot of time editorializing. It's a conscious choice by me; that way I have more time for news. I strive to make it a very good current information source for the engineering/science librarian community.

JM: I'm setting you up on this one: Have you been an active member of other organizations besides SLA? Which ones? What have you done with them?

CLW: I'm a member of the Kentucky Library Association and am the chair of the local arrangements committee for the fall conference for the second year in a row now. I am also a member of the Engineering Libraries Division of the American Society for Engineering Education; ASEE is an essential membership for an engineering librarian.

In SLA, I am a member of the Web committee for the Sci-Tech Division, but the bulk of my involvement in the association is with the Kentucky Chapter, where I serve as chair for the Web Development committee and the Awards committee. The Kentucky members are such a cool and pleasant bunch of people to work with! I would encourage everyone to be involved in his or her chapter's activities.

JM: In concluding this interview, could you name a librarian you have got to know that you find interesting and tell us a bit about him/her?

CLW: My master's adviser, Suzanne Bertrand-Gastaldy, was an inspiration to me in librarianship. She is a great researcher in computer-assisted text analysis and in semiotics. Her fervor and work ethic helped inspire me to work hard and to always do my best. She was fantastic!

JM: Any last thoughts before I get out of your hair?

CLW: I'm really looking forward to attending my first annual conference in Nashville—yes, can you believe it will be my first SLA conference? It'll be a great opportunity to meet many people I know from Web sites and e-mail, but have never had the chance to meet in person. Sounds like it will be a fun time!

Chemistry Division — Marion Peters, Chair

The Chemistry Division is concerned with chemistry and chemical technology, and the economics, educational advances, and information handling of developments in the field of chemistry and related subjects.

See You in Nashville!

There's still time to save your conference dollars: Register for the 2004 SLA Conference in Nashville by May 1 and pay the early-bird rates. The slate of candidates announced in the winter issue of the division e-newsletter will be voted on during the annual business meeting/breakfast on Monday, June 7, so I encourage you to register for this ticketed event. This issue of *Sci-Tech News* includes a pullout section featuring Chemistry Division conference activities. SLA headquarters is finalizing some room locations, so be sure to check the final program on site. Updated conference information, including poster abstracts and contact information, is available on the division's Web site at http://www.sla.org/division/dche/chemdiv.html. After you have had an opportunity to review the program listing, please let me know if you are interested in reporting on a session.

Dana Roth, Sponsorship, has had an excellent response this year from vendors supporting the division's activities, including the American Chemical Society Publications Division, Chemical Abstracts Service, Dialog, Royal Society of Chemistry, Thomson Scientific, and Wiley Interscience. The ACS Publications Division and CAS will jointly host a reception for division members—always a popular social event—on Sunday evening and will send invitations to a number of other science divisions as well. Kitty Porter, division member and local Nashville contact, is collecting restaurant recommendations to share with us. Please contact Kitty (kitty.porter@vanderbilt.edu) by June 1 to participate in a No-Host Dinner on Saturday evening.

As my year as chair will end in June at the conference, I am looking over my list of division "things to do" and organizational changes. Governing Documents, approved during SLA's Leadership Summit January 21–24, replaced division bylaws effective February 1, 2004. The board also approved "doing business as" (dba) SLA, and the association's Web site has a new look. Recently announced "Recommended Practices" intended to supplement the Governing Documents will also need to be reviewed. As a first step, Sylvia O'Brien, Archivist, has gathered information on the years of service for current division functionaries and shared it with Dawn French to use in making appointments for 2004–05.

I encourage you to contact me with your ideas and suggestions for the division. See you in Nashville!

Marion Peters
Chair, SLA Chemistry Division 2003–04

A Note from the Chemistry Division Chair Elect

Spring is finally here! You know what that means - spring cleaning. Cleaning up details and getting ready for the SLA Conference. Have you registered for the conference in Nashville? Register before the Early Bird Special ends. Come by the Chemistry Division events and meet Kathy and me. We need volunteers for the Toronto Conference. Let us know your thoughts about the conferences and the Division in general. Spring into action and get involved with the Division.

Is anyone interested in being the editor of the Division's newsletter? If so contact, Marilynn Dunker, dunker.mj@pg.com, or me. We need an editor in place before the Nashville conference to help pull the Summer issue together.

See you in Nashville!

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2004 Marion Spark Award Winner Announced

by Svetlana Korolev
University of Wisconsin- Milwaukee

Meris Mandernach is being named the recipient of the 2004 Marion E. Sparks Award for Professional Development. Meris s essay has been selected outstanding from amongst an excellent group of candidates.

Meris Mandernach, Bachelor of Arts in Chemistry, College of Wooster, OH, and Master of Science in Library and Information Science, University of Illinois at Urbana-Champaign, is a new Science Instruction Coordinator/Bibliographer at the Science Library, Loyola University, Chicago, Lake Shore Campus, since December 2003.

An honorary certificate and a check for $1500 will be presented to a winner at the SLA Chemistry Division Annual Business Meeting on June 7, 2004, Nashville, TN.

Established in 2002 by the Chemistry Division of the Special Libraries Association, the award is designed to recognize the ambitious members and assist them with their career growth.

The award is named to honor Marion E. Sparks, a chemistry librarian at the University of Illinois from 1913 until her death in 1929, who contributed a great deal to the field of chemical information.

Profile of Meris Mandernach

NAME: Meris A. Mandernach

OCCUPATION: Science Instruction Coordinator/ Bibliographer

IF I WEREN'T IN MY CURRENT POSITION, I'D BE: vacationing around the world... oh wait, that requires money, so I'd probably be working in another library, either special or academic, dreaming about vacationing around the world.

I DECIDED TO GO TO LIBRARY SCHOOL BECAUSE: I love the academic environment. I enjoy being around researchers without actually working in the lab. I love the theory and hate the chemicals.

THE ONE THING I REALLY LOVE TO DO AT WORK IS: answer those hard to find reference questions.

I AM A MEMBER OF SLA BECAUSE: You have the opportunity to meet with librarians from a variety of venues, academic and special, and share ideas.

MY FAVORITE WEBSITE: http://www.cartalk.com/ among other NPR programs.

BEST VACATION I'VE EVER TAKEN: escaping to Maui in the winter.

LAST GOOD BOOK I READ: Barbara Kingsolver's Pigs in Heaven

FAVORITE ACTIVITY: crafting, knitting or working on pottery

Chemistry Division Nomination Report

Suzanne Fedunok, Head, Coles Science Center, NYU-Bobst Library

On behalf of the 2004 Nominating Committee of the SLA Chemistry division, I have the pleasure to present the slate of candidates for office in 2005.

Chair-Elect: Ted Baldwin - Corporate Librarian, Equistar Chemicals/University of Cincinnati

Ted Baldwin is a Corporate Librarian/Academic Director for University Libraries, University of Cincinnati. In this position, he manages the R&D Information Center for Equistar Chemicals, LP. Ted has been a member of SLA and the Chemistry Division since 1999, and is currently also a member of the Leadership & Management Division. Within the Chemistry Division, he has served as Treasurer, 2002/2004; and Moderator for the division poster sessions, 2001 and 2002 SLA annual conferences. At the chapter level, Ted has served as Treasurer, 2002/2004; Newsletter Editor, 2000/2002; and as a member of the Nominating Committee, 2001.

Message of acceptance from Mr. Baldwin:
I appreciate the opportunity to serve as Chair Elect for the Chemistry Division. I look forward to providing leadership in the coming years as I work to serve the diverse needs of the division's membership.

Treasurer: Kiem-Dung T. Da — Physical Sciences Librarian, Oklahoma State University

Ms. Da is Physical Sciences Librarian at Oklahoma State University, a position she has held for the past five years. Before that, she worked for ten years in library technical services. She holds a BA in Chemistry from the University of Fayetteville and an MLS from Texas Women's University in Denton, Texas. She is a new member of the Chemistry Division and last year she answered a call for volunteers and worked as a greeter at the very popular poster session. Ms. Da currently serves as treasurer of two organizations: Oklahoma State University Toastmasters and a local Buddhdist organization.

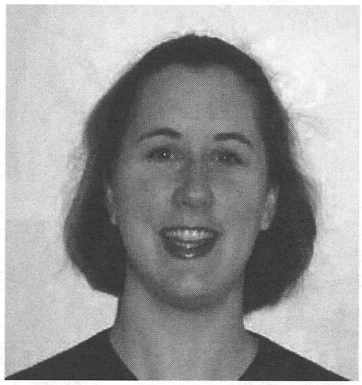
Message of acceptance from Ms. Da:
It is an honor to work within this organization of dedicated professionals. I will do my best to serve it well.

I would like to thank Marilynn Dunker for serving on the committee and giving valuable input.

2004 SLA Marion E. Sparks Essay

By Meris Mandernach
Science Library, Loyola University

When asked as a child, "What do you want to be when you grow up?" science librarian did not roll off my tongue. Yet, I find myself today in such a position, serving as bibliographer for computer science, natural science, and chemistry. I was drawn to this field where every day is challenging because information constantly evolves and the mechanisms for its dispersal change. As a science librarian, it is essential to be aware of emerging information trends and technologies in the field in order to provide comprehensive services while reducing research stumbling blocks.



How can I provide the end user with the most relevant information? Conferences encourage information professionals to gather strategies for accessing and distributing information to researchers. New techniques, such as conducting structure searches in STN or SciFinder Scholar, can be learned through hands-on training sessions. New products can be explored at exhibits. New knowledge can be gathered from the experiences of seasoned professionals. End users benefit from the information professional's continued learning because their new skills produce more accurate searches, more relevant results, and more dynamic services.

"Information professionals recognize the importance of people as a key information resource."[1] Interacting with others in the profession whose background is outside your discipline promotes an environment for idea exchange. For instance, an academic chemistry librarian collaborating with a corporate business information specialist may discover a way for each to see an old problem with new insight. Through the pooling of informational resources, professionals are able to foster creative growth. Conferences act as a conduit whereby ideas can be transferred from experienced to newer professionals through networking.

If asked today, "What do you want to be when you're grown-up?" I would say, "A continual learner." I believe that most information professionals seek to learn more in order to provide the best service, market innovative ideas, and encourage the highest quality of research to the profession. New professionals gain a complete picture of life in a special library through technical programs, informational sessions, and division discussions. By attending SLA in Nashville and understanding the depth and breadth of the field, I will be more prepared to contribute to the field in the future. I will learn how to provide the most effective services to patrons seeking information. Finally, I may also gain solutions to current information challenges and brainstorm innovative ideas for marketing library resources to researchers on campus.

References and resume can be found at: http://leep.lis.uiuc.edu/publish/manderna/resume.htm

(Footnotes)
[1]Competencies for Information Professionals of the 21st Century Revised edition, June 2003
. Prepared for the Special Libraries Association Board of Directors by the Special Committee on Competencies for Special Librarians. 9 Feb. 2004. <http://www.sla.org/content/learn/comp2003/index.cfm>

The Chemistry Division Welcomes These New Members

Barry Anderson
Royal Society of Chemistry
Thomas Graham House
Science Park Hilton Rd
Cambridge, CB4 0WF
UNITED KINGDOM

Roger Beckman
Indiana University
Life Sciences Library
Jordan Hall A304
1101 E 3rd St
Bloomington IN 47405-7005

Deborah Carter-Peoples
Ohio Wesleyan University
OWU Libraries
43 Rowland Ave
Delware, OH 43015

Douglas Doremus
Elsevier
360 Park Ave South
8th Floor
New York NY 10010

Amy K. Haberman
Booz Allen Hamilton
8283 Greensboro Dr
McLean, VA 22102

Catherine Jex
Nutraceutical International
Research & Development
1500 Kearns Blvd
Ste B200
Park City, UT 84060

Susan Kurasz
Mallincrodt Baker Inc.
Library
222 Red School Lane
Phillipsburg, NJ 08865

Kevin Lindstrom
University of British Columbia
Science & Engineering
1956 Main Mall
Vancouver BC V6T 1Z1
CANADA

Dana Moore
Cytec Industries, Inc.
Technical Information Center
1937 W. Main Street
Stamford, CT 06094-0060

Christopher Pepin
Lloydminster Public Library
5010 49 St
Lloyd Minster AB T9V 0K2
Canada

Alison Rollins
N/A

Kerry Santoro
Crompton Corporation
Library & Tech Info Svcs
771 Old Saw Mill River Rd
Tarrytown NY 10591

Krista Schmidt
Western Carolina University
Hunter Library
115 Hunter Library
Cullowhee NC 28723

Helen Sharp
Amersham PLC
Library
The Maynard Centre
Forest Farm
Cardiff, CF 14 7YT
United Kingdom

Nancy Shlaes
Governors State University
University Library
University Parkway
University Park, IL 60466

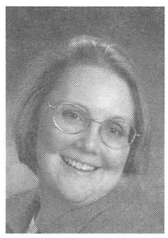
Randi L. Stocker
IUPUI University Library
755 W. Michigan Street
Indianapolis, IN 46202-5195

Marian H. Swirski
Lubrizol Corp.
Main Library
29400 Lakeland Blvd.
Wickliffe, OH 44092

Scott Warren
North Carolina State University
Research & Info Services
Box 7111
Raleigh NC 17695-7111

Engineering Division

Cheryl A. Hansen, Chair



The objectives of the Engineering Division are to provide an association for those having an interest in library and information science as they apply to engineering and the physical sciences and to promote the use of materials and knowledge for the benefit of libraries and other educational organizations

What a lovely spring day it is as I write my last official column as chair of the Engineering Division. As I have said in other columns, time goes by quickly and we will be meeting in Nashville before we know it. I want to thank all those that I have worked with during my tenure as chair. I couldn't have managed without their help. I especially want to thank Sara Tompson, Mary Crompton, Sara Davis, Mary Steiner, Dave Hook, and Kathy Nordhaus for their sage advice and support. The executive board and committee chairs have been great to work with, Thank you!

The first thing I want to talk about this month is the winter leadership meeting that was held in Albuquerque in late January. Mary Steiner, division chair-elect; Mary Crompton, Aerospace Section chair; David Hook, Aerospace Section chair-elect; Kathy Nordhaus, division director; and I were all able to attend. Mary Crompton, Kathy, and I worked on putting final touches on the programs that Engineering will be sponsoring in Nashville, while Mary Steiner and David began conference programming for Toronto in 2005. It is a never-ending cycle that creates the great sessions that make our annual conferences the great learning and networking experiences they are.

One of the most interesting speakers was our keynote speaker, Ann Rhoades from Jet Blue Airlines. Using her own experiences at Southwest Airlines and now Jet Blue, she described four basic styles of communication. Briefly, they are the Intuitor, who sees the big picture and looks at things long term; the Thinker, who is very analytic and logical; the Feeler, who is very perceptive, patient, and aware of people; and finally the Sensor, who is highly focused on the bottom line, energetic, and hard driving. She said there is no right or wrong style, that many people mix styles but we need to listen as well as talk and suit our communication style to our audience. She really had our attention and got the summit off to a great start.

At lunch, we got to meet Ethel Salonen, our incoming chair, and the candidates for the SLA Board of Directors and hear them talk about themselves and why they would be good choices. Conference planning for Nashville and Toronto went on in the afternoon, as well as an interesting session on "Launching a Community of Practice for Your Unit." That evening the Rio Grande Chapter treated us to a great dinner reception at the Indian Pueblo Cultural Center. After dinner we had the Cultural Center to ourselves to wander through; it was fascinating and I believe the gift shop did extremely well that evening.

On Friday morning we met again and listened to our leaders talk about the association and where it is heading. Janice Lachance spoke about her brief time as executive director and showed us pictures of our new headquarters building in Alexandria, Va. The day continued with more meetings, Chapter Cabinet, Division Cabinet, and finally Joint Cabinet. At the cabinet meetings, Ethel Salonen brought up the topic of "DBA SLA," which translates to "Doing business as SLA." By now this topic has made the rounds of chapter and division newsletters, Web pages, and listservs. What it boils down to in my opinion is the following: The association will use SLA rather than spelling out Special Libraries Association on promotional information, letterhead, the Web site etc.; on legal documents the full name will still be used. This allows headquarters and ourselves to do what many of us have been doing already for many years. Depending on my audience, I already use SLA rather than Special Libraries Association. If you are more comfortable using Special Libraries Association then you can continue using it, but everyday business of the association will use the acronym SLA from now on.

On Saturday the SLA Board of Directors met while others slipped away to visit Santa Fe for a few hours. This was a very successful leadership summit, the meetings were excellent and the networking superb, and the Rio Grande Chapter did a wonderful job of hosting us in Albuquerque.

The next item I am going to talk about is voting. I never expected to find myself discussing this in an *STN* column, but here goes. The Engineering Division just had our annual election and the voting turnout was less than 25 percent of the division membership. I will admit this is not a new phenomenon; voter turnout has not been great for quite awhile. This year we tried something new in hopes of getting a greater response, but the response level stayed about the same. As you all should know, we sent out the ballots via e-mail and asked that they be printed out and sent back in. We also sent paper ballots to those members for whom we did not have e-mail addresses. We used Sci-Tech as our model for this; they have been doing it this way for several years. Legally we cannot do

the vote entirely online due to New York State law, under which the association is incorporated.

What can we do to get more of you to vote? This is a division of some 439 members who are spread all over North America and the world. This year less than 20 percent of our division membership voted. As a division we only get together once a year at our annual conference, but I feel we have the ability to communicate with each other more easily today than ten years ago. You may not personally know the candidates running for office, but we do send out their biographies so you have some knowledge of who they are and how they have contributed to the division. Voting is our right and our privilege. It is how you help shape the leadership of our division and the association as well as the direction in which we are heading. Please vote next year—let your voice be heard and make a difference.

Finally, the results of the election for 2005–06 chair and 2004–05 director. Kathy Nordhaus from Raytheon will be our new chair-elect and Janifer Holt from Dartmouth College will be our new director. Congratulations! A big thanks to the Nominations Committee for finding such an excellent array of candidates this year. The committee consisted of Randy Reichardt and Marilyn Redmond under the able leadership of Past Chair Sara Tompson. Their work is much appreciated.

It is time to wrap this up. I hope to see as many of you as possible in Nashville in June. There are lots of good sessions, CE courses, receptions etc., being offered this year. Come to Nashville, learn, listen, enjoy, get tired and NETWORK TILL YOU DROP. I have enjoyed my year as chair; thank you for allowing me to lead you. Come find me in Nashville, I want to meet as many more division members as I can.

Cheryl
Chair, Engineering Division of SLA
cahansen@esi-il.com

Engineering Division Welcomes These New Members

Laurie Allen
Raytheon Electronic Systems
Bedford Research Library
180 Hartwell Road
MS S4 FG7
Bedford, MA 01730

James F. Boruch
IEEE
225 Glenfield Lane
Kennett Square, PA 19348

Sharon L. Butcher
ACS
100 Kindel Dr.
Suite C212
Arnold, TN 37389-3212

Julie M. Cook
University of Washington
Engineering Library
Seattle, WA 98195

Douglas R. Doremus
Elsevier
360 Park Ave South
8th Floor
New York, NY 10010

Melissa K. Elliott
Northrop Grumman
Information Resource Center
7323 Aviation Blvd
Gate 1
Baltimore, MD 21240

Janiece M. Green
Student Member
Austin, TX 78759

Robert S. Gresehover
Johns Hopkins University APL
Rm 5-139
11100 Johns Hopkins Road
Laurel, MD 20723

Margaret D. Grilley
Guidant Corp. CRM
Library Information Center
4100 Hamline Ave. N
E106
Saint Paul, MN 55112

Amy K. Haberman
Booz Allen Hamilton
8283 Greensboro Dr.
McLean, VA 22102

Christy N. Confetti Higgins
Sun Microsystems Inc.
500 Eldorado Blvd.
BRM05-228
Broomfield, CO 80021

Laurel L. Kristick
Oregon State University
Information Services
121 The Valley Library
Corvallis, OR 97333

Kevin Lindstrom
University of British Columbia
Science & Engineering
1956 Main Mall
Vancouver, BC V6T 1Z1

Jennifer A. Luther
AMT – Assn. For Mfg. Tech.
IRC
7901 Westpark Dr.
McLean, VA 22102

Carol McAllister
Applied Safety and Ergonomics
3909 Research Park Dr. Suite 300
Ann Arbor, MI 48108

Brian A. McDonough
Thomson Scientific ISI/Derwent
Corporate Sales
3501 Market St.
Philadelphia, PA 19104

Debra D. Mills
Concurrent Tecnologies Corp.
3600 NW 36th St.
Gainsville, FL 32605

Cary D. O'Keefe
Intel Corp
FM5-169
1900 Prairie City Rd
Folsom, CA 95630-9597

Engineering Division -New Members continued

Jennifer C. Peterson
CSU Long Beach
University Library
1250 Bellflower Blvd.
Long Beach, CA 90840-1901

Monica Reese
EMS Technologies
Library & Information Center
660 Engineering Dr.
Norcross, GA 30092

Cindy Reifsnider
Hewlett Packard
Research Alliance
18110 SE 34th St.
Vancouver, WA 98683

Becki Rexrode
Lockheed Martin Info Systems
12506 Lake Underhill Road
MP-287
Orlando, FL 32825-5002

Alison Ruger
IHS
15 Inverness Way E
Englewood, CO 80112

Anita Sampratiwi
Unocal Geothermal of Indonesia
Resource Technology
14141 Southwest Freeway
Suite 6023
Houston, TX 77478-3465

Melissa J. Smith
Caterpillar Inc.
TSD/Tech Info Ctr
14009 Old Galena Road
Tech Ctr Bldg A
Mossville, IL 61552

Deborah R. Smith-Cohen
Synthesis Partners LLC
11250 Roger Bacon Dr.
Ste 2
Reston, VA 20190

Michael J. White
US Patent & Trademark Office
PTDLP
Crystal Pk 3, Suite 41
PO Box 1450
Alexandria, VA 22313-1450

Kelsey Youmans
Student Member
Vancouver, BC V5W 1N4

Aerospace Section

Mary L. Crompton, Chair

The Aerospace Section of the Engineering Division encourages communication and cooperation among information professionals concerned with aerospace, aeronautical and related technologies. In addition, it fosters dialog with entities such as NASA, the AIAA and other important sources of technical data and bibliographical services.

Hi Aero colleagues! This is my final column as chair of the Aerospace Section, and I must say, I've thoroughly enjoyed every minute of it! It's been a marvelous learning experience for me, especially since I have had the privilege of working with some terrific people. Let me take just a moment to thank them individually: first, David Hook, the section chair-elect. Dave has been a great help to me—I would be sitting at work, and a cheerful e-mail would pop up from Dave in Canada, asking if he could do anything to help! Dave has also chaired the Mandel Award Committee, which has chosen an inspired winner for 2004 (see below for more details). Thanks also to the Mandel Award Committee members for their service: Dottie Moon, Ginny Jarvis, and Marcia Rodney. I would also like to single out past chair Eileen Dorschner for thanks. She's been a real help to me in "navigating" the planning of the Aero program and reception for Nashville, plus a myriad of details that NEVER would have occurred to me! Eileen was also in charge of finding a candidate for chair-elect-elect. Last, I would like to thank Cheryl Hansen, chair of the Engineering Division. I've been fortunate that Cheryl and I live about twenty-five miles apart—she's always available for a quick consultation, by either phone or e-mail. I've learned a lot from her in the past year, and her calming influence has certainly soothed my ruffled feathers a time or two!

Our Aerospace program is totally set for Nashville, and I hope to see many of you there! As I mentioned as a "teaser" in the February 2004 issue of *STN,* our guest speaker will be Dr. Mary (Missy) Cummings, a retired F-18 Navy combat pilot. The program is set for Monday, June 7, in the late afternoon. The program title is "Into the wild blue yonder: Adventures of a female combat pilot." Missy received her B.S. in mathematics from the U.S. Naval Academy in 1988, her M.S. in space systems engineering from the Naval Postgraduate School in 1994, and her Ph.D. in systems engineering from the University of Virginia in 2003. A naval officer and military pilot from 1988 to 1999, she was one of the Navy's first female fighter pilots. She is currently the Boeing Assistant Professor in the Aeronautics and Astronautics Department at the Massachusetts Institute of Technology. Her previous teaching experience includes instructing for the U.S. Navy at Penn State and as an assistant professor for the Virginia Tech Engineering Fundamentals Division. Her research interests include human interaction with autonomous vehicle systems, humans and automation, decision support, human–computer interaction, and the ethical and social impact of technology. I have already seen her slides for the presentation and they look great—I'm excited to hear her speak. There will be a reception after her presentation with a cash bar and munchies. Due to planning purposes, we will be charging $5 for Missy's talk and it is a ticketed event (#480). Please check the room location as it may change from what is in the planner. I would like to thank in advance our sponsors, AIAA and Dialog, the information professional partner. I look forward to seeing many of you there!

The Aerospace breakfast and business meeting will be held Tuesday, June 8, at 7:30 a.m. Again, this is a ticketed event (#505) with a cost of $21. We will present our 2004 Mandel Award winner with the customary $1,000 check and a commemorative plaque. Then, I will hand over the reins of the section to the capable Dave Hook. Once again, many thanks in advance to our breakfast sponsors: AIAA and Thomson Scientific. We are always grateful for their generosity!

The winner of this year's George Mandel Award is Margaret (Peggy) Metcalf Carr. I am sure that many of you already know her; she has been active in the Engineering Division as well as the Aerospace Section for years. Previously, Peggy worked for Martin Marietta (now Lockheed Martin) for ten years as manager of the Business Information Center at corporate headquarters and as a technical information specialist for the research and development facility. From 1990 to 2003, she was principal of Carr Research Group, providing custom research, analysis, and consulting support to business professionals. She recently accepted a new position as intelligence analyst for the U.S. Department of Defense in Washington, D.C. Peggy received a master of library science degree in information retrieval from the School of Information Studies, Syracuse University, and a bachelor's degree in communication and history from Muskingum College. A longtime SLA member, Peggy joined the association while a Syracuse student in the late 1970s. Since then, she has held many offices and positions at the chapter, division, and section levels, including chapter president, bulletin editor, and professional development chair; DLMD section chair; and Engineering Division professional development chair. She also served on the SLA Consultation Service committee. Please join me in congratulating Peggy!

Thanks again to all of you who have made this past year so enjoyable for me—your help is sincerely appreciated. See you in Nashville!

Materials Research and Manufacturing Division — Ed Malloy, Chair

Members of the Materials Research and Manufacturing Division share information concerning all phases of materials procurement production, applications and handling by means of educational activities, cooperative programs, publications and Division-sponsored events at annual conferences.

The Materials Research and Manufacturing Division Welcomes its New Members

Barry Anderson
Royal Society of Chemistry
Thomas Graham House
Science Park Hilton Rd
Cambridge, CB4 OWF
United Kingdom

Janiece M Green
11028 Jollyville Rd
#1-160
Austin, TX 78759

Rhonda Greenwood
Thermo King Corp
314 W. 90th Street
Minneapolis, MN 55420

Amy K. Haberman
Booz Allen Hamilton
8283 Greensboro Dr
McLean, VA 22102

Catherine H. Jex
Nutraceutical Int'l Corp
Research & Development
1500 Kearns Blvd
Ste B200
Park City, UT 84060

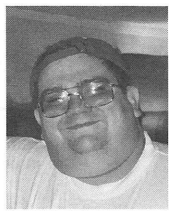
Judith K. Johnson
Inst of Econ Dev/UTSA
SBDC Nat'l Info Clearinghouse
501 West Durango
Third Fl 3.322D
San Antonio, TX 78207

Anita E. Lang
Southwest Research Inst
Library
6220 Culebra Rd
San Antonio, TX 78238-5166

Christopher J Pepin
Lloydminster Public Library
5010 49 St
Lloydminster, AB T9V 0K2 Canada

Science-Technology Division

James E. Manasco, Chair



The objectives of the Science-Technology Division shall be to draw together those members of the Special Libraries Association having an interest in the role of library and information science as applied to the recording, retrieval and dissemination of knowledge and information in all areas of science and technology, and to promote and improve the communication, dissemination and use of such knowledge for the benefit of libraries and their users.

As I write this, Easter is just around the bend and we only have a month and a half until Annual Conference. Dear Lord, where did all the time go? It seems like only yesterday we were all in New York just looking ahead to a time in the far future where we would join together in a place called Nashville. It never ceases to amaze me how time flies!

As you'll see elsewhere in the division's section, we have a great program cooked up for you in Nashville! Besides all the professional opportunities at the conference, Nashville itself is a wonderful town. There is much to do and even more to see in the Athens of the South. While rightly known as the home of country music, Nashville boasts a surprisingly diverse musical and cultural scene. The Southern Appalachian Chapter has cooked up a Web site about the area to help you find your way around. Check it out at http://www.sla.org/chapter/csap/2004Conf/sla-2004-welcome.htm for the nitty-gritty details.

On a purely selfish note, while you're looking at what the city has to offer, why not click on the Kentucky link? The state line is only minutes away from Nashville and there is a lot that Kentucky has to offer. The most extensive cave system in the world, the Corvette museum, and distilleries galore are all within an easy drive of Nashville. I'd hate for you to come to Nashville and miss out on the glorious pleasures awaiting you in the Promised Land of my birth! Speaking of my birth, Bill Monroe, father of bluegrass music, and I are from the same home county. Yep, though we were born considerable years apart, we both hail from Ohio County, Kentucky. For those fans of the music that really want to get a feel for the origins of the craft, I encourage you to check out my old stomping grounds and visit Mr. Monroe's childhood home on Jerusalem Ridge just outside of Rosine, Kentucky. You can also visit his monument in the Rosine Cemetery. Not far away is the monument for Mr. Monroe's Uncle Pen. You'll most likely pass through my hometown of Beaver Dam on the way to Rosine, if you go. While going through town, take my advice and stop off for a piece of pie and a cherry Coke (or RC) at the Beaver Dam Café. They still make cherry cokes the old-fashioned way, with actual cherry syrup. Yum!

The division is co-sponsoring (with the Engineering Division) a field trip out to Jack Daniels on Thursday. I am really looking forward to that trip and hope to see many of you there! I am a bit torn, however. As a bona fide ambassador for Maker's Mark, I feel that I must also encourage you to make the just-under-three-hour trip to Loretto, Kentucky, to tour the Maker's Mark distillery, where you can experience the alluring smell of the sour mash, the sublime beauty of the distillery grounds, and the quiet majesty of full bottles of the best Kentucky bourbon in existence being dipped by expert hands into red sealing wax … ah, I tremble with the thought of it! I'm sure you will, too.

Okay, that's enough of promoting my home state. I do want to give special thanks to Kathy Nordhaus, who has served so ably this year as our program planner for Nashville. She has put together a terrific program and I much admire and appreciate her dedication and enthusiasm.

Since, this is my final chair's column in *Sci-Tech News,* I would also like to extend thanks to the entire elected and advisory board of the division. They have worked hard and well to serve you this year. I do want to single out Darra Combs, our chair-elect, since she has worked diligently with our vendor sponsors to raise the much-needed support necessary to put on the quality programming we will have at Annual. We could not provide the programs we do without the excellent support we receive from our vendors! Please be sure to look for our signs of thanks in the exhibit hall and take the time to talk with and thank them for their support.

Also, I do want to extend another special thank you. Bonnie Osif will be stepping down soon as editor of *Sci-Tech News.* She has served faithfully for many years and her gentle guiding hand will most certainly be terribly missed. The Sci-Tech Board is now working on finding a successor for Bonnie, though we will never be able to replace her. I am personally going to miss her sense of humor and tolerance for yours truly. I thank the norns that she remained at her post through my term in office!

In closing, I do want to extend another thanks, this one to all members of the Sci-Tech Division for allowing me to serve as your chair this past year. It was truly an adventure and I appreciate the support you showed by electing me to this position. I hope I haven't been too much of an embarrassment for you!

While this year has been fun, I look forward to passing the gavel to Darra at the business meeting this summer. I wish her well in her year as chair and in preparing for the Toronto conference. See you in Nashville, y'all!

Transportation Division

Shaun Moran, Chair

The Transportation Division promotes the exchange of knowledge and information in transportation, both in general or in one of its many subdivisions including air, highway, rail, and water transort, and multimodal transportation.

In my last column as chair of the Transportation Division, I want to thank the executive and members of the division for their help over the past year. Past chair Roberto Sarmiento was always available by telephone to answer any questions. Nelda Bravo, head of the National Transportation Library, always has innovative ideas for both programs and having fun! Betty Lou Hicks, our incoming chair, has more experience than most of us, having been chair of the Engineering Division and past treasurer of the Transportation Division. I valued all of Betty Lou's advice. Dot Finn, our fearless fund-raiser, continually assured me that a lot of small donations from sponsors were even better than the big ones, since it was more likely they would sponsor again. Rita Evans was yet another voice of caution not to overspend. I needed that. Bulletin organizer John Galwey did a terrific job of getting articles for our division to Bonnie Osif at *Sci-Tech News.* And Dan Krummes did a fabulous job on the nominating committee to find a new chair-elect nominee.

Achievements

The Transportation Division's revamped Web site should be available by the time you read this message. Roberto Sarmiento and his team will announce it on TranLib Serv (and the *New York Times,* according to Roberto).

Mary Ellen Tucker is still investigating the possibility of a Web site for reviews of books and reports related to transportation. She has written up a report with some recommendations for discussion at the division business meeting in Nashville. Janice Bain-Kerr is leading a committee investigating a Transportation Division scholarship, which will report at the annual conference.

As Jerry Baldwin reported on the listserv, one of the Transportation Division's own, Dan Trefethen of Boeing, has been elected a director on SLA's board. I certainly voted for him and wish him well! You've got to vote for a man who wears hats so well.

Elsewhere in this issue is a copy of the division's final program for the Annual Conference in Nashville. Please check the online planner for changes and last-minute updates. This year Nelda Bravo has planned the GTRIC annual meeting. It will involve a discussion to develop recommendations on how best to pursue collaborative relationships within the transportation community (including networks and consortia) and align existing services and programs with those provided by transportation librarians. We have partnered with the Aerospace and Military Librarians divisions for several sessions, as well as many other divisions and chapters for the All Sciences Reception, which will be held at the Wildhorse Saloon in downtown Nashville. Those of you who own a Saturn car must join our Saturn plant tour.

Thanks for the opportunity to be part of this wonderful division. See you in Nashville—if not, have a wonderful summer.

Shaun

Chemistry Division Conference Program
Nashville, June 5-10, 2004

Check Final Program for locations

Saturday, June 5 8 am – 5 pm
Continuing Education: Chemistry for the Non-Chemist Librarian
***Ticketed event #110 $299 mbr/$399 nmbr
Content: Any information scientist responsible for providing chemistry reference services must understand the basics of chemistry. This course includes:
1. An introduction to chemistry.
2. Basic concepts and research questions in organic, physical, inorganic, analytical, and biological chemistry.
3. An overview of how a chemists' research needs direct his or her information needs.
Speakers: Bartow Culp, Purdue University; Judith Currano, University of Pennsylvania; Dana Roth, CalTech

Saturday, June 5 6–8 pm
No Host Dinner for early arrivals
Why dine alone when you can join other Chemistry Division members for conversation and company at a restaurant recommended by DCHE member Kitty Porter, our "local Nashville contact".
RSVP by June 1 with an email to:
kitty.porter@vanderbilt.edu

Sunday, June 6 7:30-8:45 am
***Ticketed event #205 $5.00
Academic Librarians' Roundtable (a joint session with Science & Technology and Biomedical & Life Sciences Divisions)
Content: This session allows academic librarians to discuss issues of interest to them. Continental breakfast included.
Moderator: Antoinette Nelson, University of Texas at Arlington
Sponsors: American Chemical Society Publications Division; Thomson Scientific

Sunday, June 6 Exhibit hours 11 am – 6 pm
Exhibits open at 11 am! Visit the Exhibits/ Thank our sponsors!

Sunday, June 6 1-5 pm
Continuing Education: Chemical Information Sources, Request and References
***Ticketed event #315 $199 mbr/$299nmbr
Content: This course teaches the types of questions which chemical researchers present to an information specialist and reference sources that can be used to answer them. The course will cover types of reference sources in the chemical sciences, their access points, and the questions they are best equipped to handle.
Speakers: Denise Callihan, PPG Industries; Bartow Culp, Purdue University; Judith Currano, University of Pennsylvania; Dana Roth, CalTech

Sunday, June 6 4-6 pm **Exhibitors Reception for Conference Attendees**

Sunday, June 6 6-7:30 pm
DCHE Board Meeting I
Content: Chemistry Division board meeting with 2003-2004 officers, committee chairs, and functionaries.
Sponsor: Thomson Scientific

Sunday, June 6 8-10 pm
ACS/CAS Reception for Chemistry and other science divisions

June 6 8:30 pm – 11:30 pm
All Sciences Reception, Wildhorse Saloon, downtown Nashville
***** Ticketed event #350, Price: $15.00 (includes two drinks, hors d'oeuvres, music, and dance lessons. Use the shuttle between Opryland Hotel and downtown Nashville.**
Presented by: Science and Technology Division, Biomedical and Life Sciences Division, Engineering Division, Food-Agriculture and Nutrition Division, Kentucky Chapter, Social Science Division, Transportation Division
Sponsors: SAME; Dialog, The Information Professional Partner

Monday, June 7 7:30-8:45 am
DCHE Business Meeting Breakfast
***Ticketed event #420 $15
All division members are invited to attend the annual business meeting and breakfast. Meet other division members and the division officers, hear about division activities.
Sponsor: Royal Society of Chemistry

Monday, June 7 9-10:15 am
Opening General Session
Speaker: Dr. Carl S. Ledbetter, senior vice president, engineering/research and development, Novell, Inc.

Monday, June 7 10:30 am-12 noon
(Exhibit hours 8 am –4 pm)
Visit the Exhibits/ Thank our sponsors!

Monday, June 7 12:15-1:30 pm
Poster Session: Teaching Users via the Web—Web-based Training and Instruction in the Sciences
Content: Web-based instruction is becoming

more important as our users increasingly access library resources remotely and as distance education evolves. This session provides an opportunity to present and discuss efforts in assisting users at their desktops
Moderator: Mary Ann Mahoney
mmahoney@library.berkeley.edu
Sponsor: American Chemical Society, Publications Division

Poster Title/ Presenter:
Using Streaming Video for Library Tutorials
Smadar Izhaky and Beth Weil
Evolution of a Chemical Literature Web Tutorial at Texas A&M
Kathy M. Jackson and Eva Maddox
Library Instruction on the Web: Tips, Strategies and How to Get Started
Cory Craig
Making Organic Chemistry Relevant
Daureen Nesdill
The Creation and Implementation of an Information Retrieval Course for the Sciences at LSU using Blackboard
William W. Armstrong
Blended Learning in Chemistry: Using the Web to Improve In-Class Instruction
Don MacMillan and Jennifer Lee
Use of a Content Management System and Reusable Learning Objects to Develop an Integrated Suite of Instructional Materials for Scientific Information Literacy
Eleanor M. Smith and May M. Chang
e-Training for e-Self Service
Sue Jones and Dr. Andrea Kirk
Usability Study of a Web-Based Instruction Module
SuHui Ho and Jeff Williams
Information Literacy Teamed with Science Literacy
Kathy Whitley, Troy D. Sadler, Teresa Eckart, and Jennifer E. Lewis
Science Information Literacy for the Undergraduate: Update
Jennifer Lee Baldwin and Margaret Dominy
Creating a Web-Based Science Tutorial: an Opportunity for Inter-Institutional Collaboration
Carol E Vreeland and May Chang

Monday, June 7 2-3:15 pm
Vendor Update: Web Tutorials and Interactive Software
Content: Vendors of science information discuss how they create web-based products to educate our users and us; plus vendors of software designed to facilitate the creation of these products.
Moderator: Katherine M. Whitley, University of South Florida
Sponsor: CAS, A division of the American Chemical Society

Monday, June 7 8–10 pm
Division Suite Open House
Come to the Division Suite and visit with other members.

Tuesday, June 8 9-10:15 am
Web Committee Meeting: Interested Chemistry Division members

Tuesday, June 8 9-10:15 am
Instructional Committee Meeting: Interested Chemistry Division members

Tuesday, June 8 10:30 am-12 noon
(Exhibit hours 10 am – 5 pm)
Visit the Exhibits/ Thank our sponsors!

Tuesday, June 8 12:15-1:30 pm
DCHE Corporate Roundtable
Content: Bring your "brown bag" lunch and meet other division corporate professionals for a lively discussion on current topics of mutual interest.
Moderator: Ted Baldwin, University of Cincinnati/ Equistar
Sponsor: Royal Society of Chemistry

Tuesday, June 8 2-3:15 pm
Materials Science & Engineering; Past, Present, and Future — "It's a Material World"
Speaker: Dr. John D. "Doug" Mackenzie, University of California, Los Angeles
Content: Overview of the historical development of materials science and engineering from the bronze age to the present; the contributions of chemistry, physics and other fields of engineering; the important factors influencing its growth via research and government funding, competitions in industry for new products, and more recently, the increasing challenge of nanotechnology, medicine and biology. The future of materials science and its impact on education, industry, and society also will be discussed.
Sponsor: American Chemical Society Publications Division; Dialog, The Information Professional Partner

Tuesday, June 8 3:45-5 pm
Materials Information (a joint session with Materials Research & Manufacturing Division)
Content: Speakers panel of representatives from several materials research associations.
Sponsor: Wiley Interscience
Wednesday, June 9 7:30-8:45 am
DCHE Board Meeting 2
Content: Chemistry Division board meeting with incoming 2004-2005 officers, committee chairs, and functionaries.
Sponsor: Thomson Scientific

Wednesday, June 9 9-11 am
Closing General Session and SLA Annual Business Meeting
Speaker: Mr. Bill Ivey, director of the Curb Center for Art, Enterprise, and Public Policy at Vanderbilt and former chair of the National Endowment for the Arts

Wednesday, June 9 1:15-2:30 pm
Winner's Circle of Best Science Websites (a joint session with Biomedical & Life Sciences, Environment & Resource Management, and Science & Technology Divisions)
Content: Members of DCHE, DBIO, DERM, and DST will highlight the best new, recently revised, and "must see" websites in their respective subject areas.
Moderator: A. Ben Wagner, SUNY – Buffalo
Speakers: Kristen Anderson, University of Hawaii (Marine and aquatic resources); Joseph Kraus, University of Denver (Planetary and solar astronomy); Jennifer Rojas, Wyeth Research (Biomedical and life sciences); A. Ben Wagner, SUNY – Buffalo (Analytical and toxicological)
Sponsors: American Chemical Society Publications Division; Infotrieve, Inc.

Exhibits — Info-Expo Hall Open — Meet more than 300 exhibitors. Don't miss the giveaways
Sunday, June 6 11 am – 6 pm
Monday, June 7 8 am – 4 pm
Tuesday, June 8 10 am - 5 pm

Entertainment
Grand Ole Opry
http://www.gaylordhotels.com/gaylordopryland/entertainment/opry.cfm
For tickets & info: 888-777-6779
www.opry.com
Showtimes: Fridays 6:30 pm & 9:30 pm
Saturdays 6:30 pm & 9:30 pm
Tuesdays 7 pm

Sci-Tech Programs in Nashville!

See the list of programs listed below and join us!
Check your final program for final room assignments!

Saturday, June 5, 2004

8:00 AM – 5:00 PM
CE Course: Competitive Intelligence for Sci-Tech Information Professionals
Speaker: Angela Pollis, KnowledgeLink Consulting Service

Sunday, June 6, 2004

7:30 AM – 8:45 AM
Academic Librarians Roundtable
Ticket #205, Price: $5.00
Moderator: Antoinette Nelson, University of Texas at Arlington
Sponsors: American Chemical Society Publications Division; Thomson Scientific

10:30 AM – Noon
Science and Technology Division Newcomers Brunch
All students and newcomers to the division, plus current members, are invited to attend. Meet division officers, learn more about the division, and begin networking.
Moderator: Stephanie White, Franklin W. Olin College of Engineering
Sponsor: YBP Library Services

1:30 PM – 3:00 PM
Publisher/Librarian Archiving Initiatives
Moderator: Stella Ota, Physics Library, Stanford University
Speakers: Terry Hulbert, Institute of Physics Publishing; Vicky Reich, Stanford University, LOCKSS (Lots of Copies Keep Stuff Safe); David Stern, Yale University
Sponsors: IEEE; Swets Information Services

2:00 PM – 4:00 PM
Science and Technology Outgoing Board Meeting
Moderator: James Manasco, University of Louisville, Health Sciences Center

8:30 PM – 11:30 PM
All Sciences Reception
Location: Wildhorse Saloon, downtown Nashville
Ticket #350, Price: $15.00
Reception for all science-related divisions at the Wildhorse Saloon in downtown Nashville. Tickets include two drinks, hors d'oeuvres, music, and dance lessons. Use the shuttle between Opryland Hotel and downtown Nashville.
Moderator: Kathy Nordhaus, Raytheon Company
Sponsors: ASME; Dialog, The Information Professional Partner

Monday, June 7, 2004

7:30 AM – 8:45 AM
Science and Technology Division Business Meeting and Breakfast
Ticket #405, Price: $15.00
Moderator: James Manasco, University of Louisville, Health Sciences Center
Sponsor: The British Library; CISTI; IEEE; YBP Library Services

12:15 PM – 1:30 PM
Nanotechnology: What It Is and How It Is Used
Speakers: TBD; Charles Trotter, Cordis/J&J
Sponsor: American Chemical Society

3:45 PM – 5:00 PM
Science and Technology Information Resources
Moderator: Mary Frances Lembo, Pacific Northwest National Laboratory
Speaker: James Manasco, University of Louisville, Health Sciences Center
Sponsor: CAS, A division of the American Chemical Society

11:00 PM – 3:00 AM
Engineering Division, Aerospace Section, and Science and Technology Division Open House
Location: Division suite
Sponsors: American Society of Civil Engineers; IEEE

Tuesday, June 8, 2004

9:00 AM – 10:15 AM
The Semantic Web: Modeling the New Web with Librarian Input
Moderator: Thomas Clark, Sun Microsystems
Speaker: Eric Miller, World Wide Web Consortium's Semantic Web; Dav Robertson, National Institute of Environmental Health Sciences
Sponsor: Dialog, The Information Professional Partner

3:45 PM – 5:00 PM
Standards Roundtable: Question and Answer time with the SDOs
Moderator: Randy Reichardt, Cameron Library, University of Alberta
Sponsors: IHS; ILI INFODISK, INC.; Open Text, INC.; Thomson Scientific

3:45 PM – 5:00 PM
The Future of Technical E-books
Speaker: Glenn Pagan, Knovel Books
Sponsor: Knovel Corporation

3:45 PM – 5:00 PM
Science and Technology Contributed Papers
Moderator: Roger Beckman, Indiana University
Speakers: A. Ben Wagner, SUNY-Buffalo; Scott Warren, North Carolina State University Libraries; Stephanie White, Franklin W. Olin College of Engineering
Sponsor: Dialog, The Information Professional Partner

11:00 PM – 3:00 AM
Engineering Division and Science and Technology Division Open House
Sponsors: American Society of Civil Engineers; IEEE

Wednesday, June 9, 2004

11:30 AM – 12:30 PM
Science and Technology Division Incoming Board Meeting
Moderator: Darra Combs, Westinghouse, Savannah River Company

11:30 AM – 12:45 PM
Historical/Obsolete Standards: What, Why, Where, and How?
A look at historical/obsolete standards: what they are, why are they
Moderator: Randy Reichardt, Cameron Library, University of Alberta
Speakers: Claudia Bach, Document Center; Kyle Feldman, ILI; Jean Piety, Cleveland Public Library
Sponsor: Thomson Scientific

1:15 PM – 2:30 PM
Winners' Circle of Best Science Websites
Moderator: A. Ben Wagner, SUNY – Buffalo
Speakers: Kristen Anderson, University of Hawaii; Joseph Kraus, University of Denver; Jennifer Rojas, Wyeth Research; A. Ben Wagner, SUNY – Buffalo
Sponsors: American Chemical Society Publications Division; Infotrieve, Inc.

3:00 PM – 4:15 PM
Computer Science Roundtable
Moderators: Mitchell Brown, Princeton University
Sponsors: IEEE; INSPEC

Thursday, June 10, 2004

8:30 AM – 3:00 PM
Jack Daniels Distillery Tour
Price: $45.00, Tickets must be purchased on a separate form. If purchased in advance, tickets will be sent directly from Gaylord Destination Sales
For the Thursday tours, buses will pick up at the Presidential Portico.
You may purchase or pick up your tickets on-site at the Concierge desks located either in the Magnolia or Cascades Lobbies.
Moderator: Cheryl Hansen, Engineering Systems

TRANSPORTATION DIVISION PROGRAMS – Nashville SLA 2004

Saturday, June 5, 2004
8:00 p.m.-11:00 p.m.
Scavenger Hunt among the bars and restaurants of Gaylord Opryland Resort and Convention Centre. Watch the ListServ for more details.

Sunday, June 6, 2004

Government Transportation Resources and Information Committee (GTRIC) Program
8:30 a.m. - 4:30 p.m.
Location: Governor's Chamber E
Moderator: Nelda Bravo, Director, National Transportation Library
Speakers:
TRIS, RIP, Policy Study
Barbara Post
Transportation Research Board, National Academies
Managing an online thesaurus
Sandra Tucker
Texas Transportation Institute
What's new at TFHRC
Martha Soneira
Federal Highway Administration
Reauthorization Update
Nina McLawhorn
Wisconsin DOT
NTL Update
Nelda Bravo
Bureau of Transportation Statistics
Consortia, Networks, and Next Steps (panel presentations & discussion)
How DOTs partner with State Library Consortia
Sue Sillick
Montana Department of Transportation
Midwest Transportation Knowledge Network
Arlene Mathison
Minnesota Center for Transportation Studies
Collaborative Relationships for Knowledge Networks in Transportation
Nina McLawhorn
Wisconsin Department of Transportation
Sponsor: CISTI

ALL SCIENCES RECEPTION
Sunday, June 6, 2004; 8:30p.m. – 11:30 p.m.
Location: Wildhorse Saloon in downtown Nashville
Ticket #350, Price: $15.00
SLA Units: Science & Technology ; Biomedical & Life Sciences; Engineering; Food Agriculture & Nutrition; Kentucky Chapter; Social Science Division; Transportation Division
Sponsors: ASME; DIALOG, the Information Professional Partner

Monday, June 7, 2004

DTRN Business Meeting and Luncheon
Monday, June 7, 2004; 12:15p.m. – 1:30 p.m.
Location: Governor's Chambers D
Moderator: Shaun Moran, Manager Transport Canada Library
Ticket # 460, Price: $55.00
Sponsors: American Society of Civil Engineers (ASCE)
CCH

Into the Wild Blue Yonder: Adventures of a Female Combat Pilot
Monday, June 7, 2004; 3:45p.m.-5:45p.m.
Moderator: Mary Crompton, Northrop Grumman Corp.
Speaker: Missy Cummings, Massachusetts Institute of Technology
Ticket #480, Price: $5.00 - A reception/"meet and greet" will take place immediately after the presentation. Light refreshments will be provided.
SLA Units: Engineering; Aerospace Section of DENG; Science & Technology; Transportation
Sponsors: AIAA, DIALOG

Tuesday, June 8, 2004
Saturn Plant Tour
Tuesday, June 8, 2004: 12:00 p.m.-3:30 p.m.
Ticket # 540, Price: $40.00 – Boxed lunch included

Group Services Tuesday, June 8, 2004; 3:45 p.m.-5:00 p.m.
Location: Bayou A
Moderator: Nelda Bravo
Speakers:
Edwin B Burgess, *Director , Combined Arms Research Library*, U.S. Army Command and General Staff College
Jennifer Pearson, *Product Support Specialist*, OCLC
Jerry Baldwin, Minnesota Department of Transportation
SLA Units: Transportation Division; Military Librarians Division
Sponsor: OCLC Online Computer Library Company

Wednesday, June 9, 2004
Transportation Division Executive Board Meeting
Wednesday, June 9, 2004. 7:30a.m.-8:45 a.m.
Location: Delta Island B
Moderator: Betty Lou Hicks, Hanson Professional Services Inc.

Gray/Grey Literature
Wednesday, June 9, 2004; 11:30 a.m.- 12:45 p.m.
Location: Canal D
Moderator: Shaun Moran, Transport Canada Library
Speakers:
Ms. Fay Hjartarson, *Government Information Holdings Officer*, National Library and Archives of Canada
Bonnie Klein, *Program Manager for Foreign and Copyrighted Information*, Defense Technical Information Center
Bonnie Osif, *Engineering Reference and Instruction Librarian*, Penn State University
SLA Units: Transportation Division; Military Librarians Division
Sponsors: Elsevier

NOTES

Bob Sweet — Transportation Division Chair Nominee

Members of this year's Transportation Division Nominating Committee (Dan Krummes, Chair and members Nelda Bravo and Jane Watson) are pleased to announce that the Division nominee for 2004/2006 Chair-Elect/Chair is Bob Sweet from the University of Michigan Transportation Research Institute. Formal election will occur during the Division's annual business meeting this coming June at the SLA Annual Conference in Nashville. The 2004/2006 Chair-Elect/Chair will plan and preside over Division programs at the 2006 Annual Conference, to be held in Baltimore, Md.

Bob Sweet is the coordinator of research information and publications at the University of Michigan Transportation Research Institute (UMTRI), where he has worked since 1991. He received his A.M.L.S. degree in 1986 from the University of Michigan's School of Information (known at the time as the School of Information and Library Studies). He also holds a B.A. in English from Wayne State University in Detroit.

Bob's entire library career has been in special, sci-tech libraries. His first position out of library school was with the BASF Corporation's Research Library in Wyandotte, Michigan. In between BASF and UMTRI, he had a brief stint with Personal Bibliographic Software, Inc., the creators of ProCite.

Bob is also a musician, author, and speaker. He wrote and published the book Music Universe, Music Mind, a history of the Creative Music Studio in Woodstock, New York. He writes and speaks on the power of information to have an impact on organizations' and individuals' profitability and competitiveness.

Bob was secretary/treasurer of the Special Libraries Association Transportation Division from1999-2000.

The Transportation Division Welcomes These New Members

Rosalyn Alleman
50 A Cres Rd
Greenbelt, MD 20770
UNITED STATES OF AMERICA
Phone: 1-301-513-5010
Email: rosalyn.alleman@bts.gov

Rhonda Greenwood
614 E 58th St
Minneapolis, MN 55417-2426
UNITED STATES OF AMERICA
Phone: 1-612-823-8445
Email: rhonda_greenwood@thermoking.com

Ginny Norris
Univ of KY
KY Transportation Ctr
176 Raymond Bldg
Lexington, KY 40506
UNITED STATES OF AMERICA
Phone: 1-859-257-4513
Fax: 1-859-257-1815
Email: gnorris@engr.uky.edu

Dianna Roberts
Opus Intl Consultants
100 Willis St
PO Box 12004
Wellington, 6038
NEW ZEALAND
Phone: 006 44 471 7250
Fax: 006 44 473 1075
Email: dianna.roberts@opus.co.nz

Amy Haberman
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N. Springfield, VA 22151
UNITED STATES OF AMERICA

Mary Neben
NE Dept of Roads
Communication Division
1500 Highway 2
Lincoln, NE 68509-4759
UNITED STATES OF AMERICA
Phone: 1-402-479-4316
Fax: 1-402-479-3989
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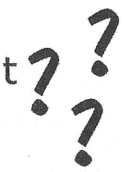
Ellen Turner
11362 Links Dr
Reston, VA 20190
UNITED STATES OF AMERICA
Phone: 1-703-796-0850
Email: ellenturner@comcast.net

Gosh! I always wondered....

Dr. Juana Noit



What follows is a very brief timeline of the history of science and technology—just some of the inventions and discoveries that stand out and fit into a few common themes throughout history.

Eleventh Century
Tseng Kung-Liang describes magnetized iron
Compass for navigation is developed in China

Fourteenth Century
Cleansing wounds as an aid to healing noted by Henri de Mondeville, but not routinely practiced
Quarantine station set up for plague carriers in Ragusa in 1377

1543 Copernicus publishes theory that states the Earth and the planets revolve around the sun
1579 First eyeglasses
1608 Telescope invented by Hans Lippershey
1628 William Harvey describes the circulation of the blood, an idea known for centuries in the East and Middle East
1651 Anton van Leeuwenhoek develops the microscope
1687 Isaac Newton publishes the laws of motion and universal gravitation
1701 Giacomo Pylanni inoculates children for smallpox
1714 Fahrenheit develops the mercury thermometer
1742 Anders Celsius develops the temperature scale named for him
1743 Jean Pierre Christian modifies the Celsius scale to place freezing at 0 degrees and boiling at 100 degrees
1753 James Lind uses lemon juice to prevent scurvy
1796 Edward Jenner inoculates child against smallpox using cowpox
1806 Amino acid asparagines is discovered
1822 Charles Babbage develops a calculating machine
1830 Charles Lyell publishes a study discussing the great age of the Earth
1842 Crawford Williamson Long performs surgery with ether; William Norton performs dental surgery with ether publicly in 1846 and is credited with this advance
1844 Patrick Manson notes that mosquitoes might spread malaria
1857 Gregor Mendel uses plants to explore heredity
1858 Charles Darwin and Alfred Russell Wallace discuss evolution; Archibald Scott Couper notes bonding between atoms and role of carbon in organic compounds.
1873 James Clerk Maxwell publishes laws of electromagnetism
1881 Louis Pasteur develops a vaccine against anthrax
1885 Louis Pasteur develops a vaccine against rabies
1896 Antoine-Henri Becquerel finds scientific evidence of natural radioactivity
1902 Walter Sutton notes chromosomes' role in genetics
1905 Albert Einstein publishes his papers on special relativity
1907 Thomas Hunt Morgan uses fruit flies to study mutations and chromosomal role in heredity
1925 Vannevar Bush and the first analog computer
1938 A coelacanth, a fish thought to be extinct, is found in the Indian Ocean
1944 Mark I computer developed with punched tape programming
1946 ENIAC (Electronic Numerical Integrator and Computer) developed
1951 UNIVAC developed with storage on magnetic tape
1953 James Watson and Francis Crick propose double helix structure of DNA
1957 Sputnik launched
1962 Rachel Carson published *Silent Spring*, an account of the effect of chemicals on the environment
1967 Keyboards replace punch cards for data entry
1970 Floppy disks are introduced
1975 Altair 8800 (personal computer) introduced
1981 A carp is cloned in China
1984 Apples, the mouse, and pull-down menus become part of the home computer
1990 First dial-up service for consumers; Tim Berners Lee of CERN develops World Wide Web
1997 Dolly the cloned sheep born in Scotland

Let's stop our timeline there. And then it might be a good idea to sit back for a few minutes and ponder where we are now. The changes in health care alone are staggering. It is worth noting that it has been only in the last 500 years that the West understood the circulation of the blood, and less than that for inoculations, cleanliness in surgery (or any type of medical treatment for that matter!), anesthesia, vaccines, and rational ideas on the spread of disease.

Look at the discovery of some of the things we take for granted—thermometers, computers, compasses—as well as our basic scientific laws that children learn early in life. Yet, all of these are relatively recent.

And the speed is constantly increasing. Each year newspapers print a list of things that incoming college freshmen don't know about. Things like phonograph records, eight-track tapes, rotary phones, party lines, keypunch cards. There was a time when there were no ATMs, drive-through fast-food restaurants, cable and satellite systems, or desktop computing. In the lifetime of the average high school student, we have moved from simple desktop computing with data on floppy disks to PDAs with more computing power than imagined eighteen years ago. For those of us slightly older, the computer evolved from a room-sized machine and vacuum tubes to the much smaller PDAs with more computing power.

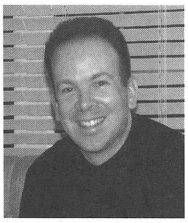
In the fifty-one years since Watson and Crick, we have mapped the genome; cloned sheep, goats, cats, fish, and more; genetically modified crops; planted human genes in animals; and discussed the possibility of "designer people." We have put men on the moon and we now search for signs of life on Mars. People live on a space station and the universe has been put on notice that we are here. All this since the simple Sputnik of 1957!

This issue of *STN* celebrates the Science-Technology Division of SLA. Sci-Tech has always been an all-encompassing division taking in the wide range of topics of science and technology, unlike the more specific divisions like Engineering or Chemistry. It allows members to see the breadth of scope and the depth of knowledge. Science and technology are at the heart of our society and provide endless fascination for those willing to open their eyes to the men and women who have discovered and explained so much. It also makes us all aware that what we have discovered is just the tip of the iceberg. There is so much more to know. My guess is it will be as or more interesting than the timeline of the past. So, as the line from a classic movie goes, "Keep watching the skies." And the oceans, and the mountains, and the microscopes, and, well, you get the picture. The world is fascinating and sci-tech gives us the means to explore!

Note: information for this column was found in the *Encyclopedia Britannica*, and at the websites *Timelinescience* [www.timelinescience.org] and *History of Science and Technology: Timeline* [www.crimsonbird.com/science/timeline.htm]

Web Reviews

David Hook



In this issue, we'll look at some of the resources in Science & Technology. There are many resources to cover, so this topic will be spread over two issues. In the next issue we'll look at some of the free sci/tech databases available on the web, as well as sci/tech education.

Current Awareness

EurekAlert! (www.eurekalert.org)
EurekAlert is produced by the American Association for the Advancement of Science (AAAS) and is a forum for posting science-related news releases. The site is an excellent source for finding about current scientific research. EurekAlert maintains a reference desk with links to dictionaries, glossaries and other resources across a variety of fields of science.

Sci-Tech News (www.scitechdaily.com)
I know I've covered this site before in this column, but it's too good a site not to be mentioned again here. The site is updated daily and summaries articles on the web about the latest developments in science and technology.

Issues in Science and Technology Librarianship
(www.library.ucsb.edu/istl)
ISTL is a quarterly publication of the Science and Technology Section, of the Association of College and Research Libraries. The publication covers a variety of topics in the field of science and technology librarianship, occasionally with 'themed' issues. ISTL contains a mix of refereed and non-refereed articles.

The SciTech Library Question (stlq.info/)
Two University of Alberta Sci-Tech librarians, Randy Reichardt (Engineering) and Geoff Harder (Biological Sciences and Computing Sciences) keep a web log related to science & technology librarianship. Both of them also keep their own blogs: Randy's is at (http://www.podbaydoor.com/) and Geoff's is at (http://www.blogdriverswaltz.com/)

Ready Reference

EurekAlert Reference Desk
(http://www.eurekalert.org/links.php)
EurekAlert maintains a reference desk with links to dictionaries, glossaries and other resources across a variety of fields of science.

Flow of Scientific Information
(www.lib.uwaterloo.ca/usered/grad/researchskills/flow_of_info.html)
From the University of Waterloo's Electronic Library (UWELib), this page diagrams the flow and evolution of scientific information

History of Science

A Catalog of the scientific community in the 16th and 17th centuries
(es.rice.edu/ES/humsoc/Galileo/Catalog/catalog.html)
This database consists of 631 detailed biographies on members of the scientific community during the 16th and 17th centuries. Each biography contains vital facts about each individual and their contributions to science.

History of Science Society
(www.hssonline.org/main_pg.html)
Founded in 1924, the History of Science Society is dedicated to promoting interest in science, technology and medicine and its historical relationship with society. At this site, users will find a Guide to the History of Science, information about upcoming conferences, grant and funding information as well as job postings.

Fun Sites & Sites for Kids

Adventures in Science and Technology
(collections.ic.gc.ca/science/english/index.html)
This site, part of the Canadian Government's Digital Collections site, contains information about science and technology, profiles of Canadian scientists and fun learning projects for kids.

BBC Online: Science (www.bbc.co.uk/sn/)
The BBC's Science site contains a wealth of news, reviews and information about science. The site is searchable by keyword, topic, or content type (i.e. you can search for articles, quizzes, images, etc.)

Questacon (www.questacon.edu.au/)
Questacon, from the Australian Government's Department of Education, Science and Training, is a site aimed at promoting awareness and understanding of science and technology. There are parts of the web site aimed at kids, teens, and teachers. The kids section includes many fun activities. The section for teens includes the Smart

Moves site with information about careers in science and technology.

The Why Files (whyfiles.org/)
The Why Files is a fun site that addresses the science behind current news headlines. As well, there are articles about recent news events and discoveries in science.

Finding Other Sci/Tech Resources on the web
Finally, here are some resources for finding additional sci/tech related web resources:

The Internet Public Library
(hwww.ipl.org/div/aon/browse/sci00.00.00/)
The University of Michigan's Internet Public Library has many useful links across a wide variety of fiends in the natural and physical sciences

Internet Scout Report (scout.wisc.edu/)
The Internet Scout Report is a great way to find new science and technology web resources. Sign up to receive the Scout Report by email and you'll receive a regular listing of new and useful web resources in the physical sciences, life sciences and/or math, engineering and technology

The Scientific Web
(www.scientificweb.com/sciencee.html)
The Scientific Web is a finding aid for locating scientific software on the web. There are descriptions of software available, new product announcements, links to downloadable demo versions, reviews and many other resources

Women-related Sites in Science & Technology
(research.umbc.edu/~korenman/wmst/links_sci.html)
The site is a collection of science and technology web sites that focus on women in science and technology. The site is aimed at promoting interest in the field for women and girls.

SLA on the Web
Sci-Tech News Division Websites

(information taken from the SLA Homepage: www.sla.org)

Chemistry Division
Web Addresses: www.sla.org/division/dche/chemdiv.html
depts.washington.edu/chemlib/sanant.html
Subscription: listerv@listserv.indiana.edu
List Address: CHMINF-L@listserv@listserv.indiana.edu

Engineering Division
Web Address: www.sla.org/division/deng/engdiv.html
Subscription Address: Majordomo@iee.org.uk
List Address: SLA-ENG@iee.org.uk

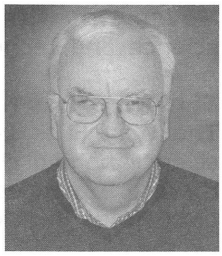
Materials Research and Manufacturing Division
Subscription: Lists@lists.sla.org
List Address: SLA-DMRM@lists.sla.org

Science-Technology Division
Web Address: www.sla.org/division/dst/
Subscription: majordomo@welles.library.northwestern.edu
List Address: SLA-ST@wells.library.northwestern.edu

Transportation Division
Web Address: http://www.library.nwu.edu/transportation/slatran/
Subscription Address: Listserv@listserv.acns.nwu.edu
List Address: TRANLIB@listserv.acns.nwu.edu

New Science and Technology Journals

Earl Mounts



Engineering in Life Sciences. 1618-0240. Editors: A. Abeliovich et al. Wiley-VCH. v.4, 2004. 6/year. $694.00. http://www3.interscience.wiley.com/cgi-bin/jhome/85007410

Biotechnology is one of the most breathtaking sciences of the last decade and the journal *Engineering in Life Sciences* reflects its fast moving nature, serving as a worldwide forum for the exchange of scientific information in this field, its interdisciplinary character supporting the transfer of scientific results in environmental, industrial and agricultural biotechnology and health care into technological processes. Concentrating on technology rather than biological fundamentals, *Engineering in Life Sciences* provides useful insight into engineering applications with all papers on microbiology, genetics, biochemistry, and chemistry being technologically relevant. Papers include original research articles, leading articles, and reviews. In addition, there are abstracts from key meetings, correspondence and book reviews.

Environmental Chemistry Letters. 1610-3653. Editors: S. Dudd et al. Springer. v.1, 2003. 4/year. $225.00. http://www.springeronline.com/sgw/cda/frontpage/0,10735,3-198-0-0-0,00.html

Environmental Chemistry Letters is located at the interfaces of geology, chemistry, physics, and biology. Articles are of high importance to the study of natural and engineered environments in the following fields: characterization of natural and affected environments; behavior, prevention, treatment, and control of mineral, organic, and radioactive pollutants; interfacial studies involving media such as soil, sediment, water, air, organism, and food; green chemistry, environmentally friendly synthetic pathways, and alternative fuels; ecotoxicology and risk assessment; and environmental analytical chemistry, biomolecular tools and tracers e.g. stable isotopes

IEEE Geoscience and Remote Sensing Letters. v.1, 2004. 4/year. $430.00 http://shop.ieee.org/store/product.asp?prodno=029-196.

This publication emphasizes rapid turnaround for shorter, high-impact papers on the theory, concepts, and techniques of science and engineering as they apply to the sensing of the earth, oceans, atmosphere, and space; and the processing, interpretation, and dissemination of this information. Special efforts will be made to accommodate papers containing "extended objects" such as image animations.

Journal of Electronic Resources in Medical Libraries. 1542-4065. Editor: M.S. Wood. Haworth Press. v.1, 2004. 4/year. $240.00. http://www.haworthpress.com

The *Journal of Electronic Resources in Medical Libraries* is a peer-reviewed professional journal devoted to the access, evaluation, and management of electronic resources in the medical library environment. The material in the journal will complement articles published in Medical Reference Services Quarterly (also edited by M. Sandra Wood), which highlights the reference and bibliographic instruction aspects of electronic resources. Topics addressed by this new journal include collection development and selection of electronic resources, electronic document delivery in medicine and health care, enhancing electronic resource user services, site licensing, merging serial and book formats in the electronic library, coping with electronic misinformation, fraudulence, and shams on the Internet, the library's role in medical informatics, the role of medical libraries with PDAs, archiving issues for electronic formats, and cost analyses of digital resources.

Landslides. 1612-510X. Editor: K. Sassa. Springer. v.1, 2004. 4/year. $314.00. http://www.springeronline.com/sgw/cda/frontpage/0,10735,3-40109-70-18981265-0,00.html

Landslides are gravitational mass movements of rock, debris, or earth. .They may occur in conjunction with other major natural disasters such as floods, earthquakes, and volcanic eruptions . Expanding urbanization and changing land-use practices have increased the incidence of landslide disasters. Landslides as catastrophic events include human injury, loss of life, and economic devastation and are studied as part of the fields of earth, water, and engineering sciences. The aim of the journal *Landslides* is to become the common platform for the publication of integrated research on landslide processes, hazards, risk analysis, mitigation, and the protection of our cultural heritage and the

environment. The journal publishes research papers, news of recent landslide events and information on the activities of the International Consortium on Landslides.

Mediterranean Journal of Mathematics. 1660-5446. Birkhäuser. v.1, 2004. 4/year. $260.00. http://www.birkhauser.ch/journals/9000/9000_tit.htm.

Mediterranean Journal of Mathematics (MedJM) is a new publication issued by the Department of Mathematics of the University of Bari. It succeeds the journal "Conferenze del Seminario Matematico dell' Università di Bari" that was published from 1954 until 2003. The journal publishes original peer-reviewed research papers containing significant results in all fields of mathematics. Furthermore, it offers mathematicians from the Mediterranean countries a particular opportunity to circulate results of their research in a common journal.

Nanotech Briefs. v.1, 2003. Editor: L.L. Bell. Associated Business Publications. 6/year. $24.00. http://www.nanotechbriefs.com/

Nanotech Briefs magazine is the first small-tech publication that focuses on the "technology" of nanotechnology by highlighting the best of government- and industry-developed nanotech and MEMS innovations for the commercial market. Included will be articles on cutting-edge breakthroughs in this rapidly growing field in six digital (PDF) issues in 2004, targeting design engineers and engineering managers who are developing tomorrow's small-tech products today.

Paddy and Water Environment. 1611-2490. Editor: Y. Sato. Springer. v.1, 2003. 4/year. $220.00. http://www.springeronline.com/sgw/cda/frontpage/0,10735,3-10006-70-1180114-0,00.html?changeHeader=true

The aim of the journal *Paddy and Water Environment* is to advance the science and technology of water and environment related disciplines in paddy farming. The scope includes paddy-farming related scientific and technological aspects in agricultural engineering such as irrigation and drainage, soil and water conservation, land and water resources management, paddy multi-functionality, agricultural policy, regional planning, bioenvironmental systems, and ecological conservation and restoration in paddy farming regions.

Poiesis & Praxis. 1615-6609. Editor-in-Chief: C.F. Gethmann. Springer. v.1, 2001.4/year. $225.00. http://www.springeronline.com/sgw/cda/frontpage/0,10735,3-10006-70-1151372-0,00.html?changeHeader=true

Awareness of the ambivalence of scientific and technological developments has grown considerably over the last few decades. This is due to the increasing speed of technological advancements and the complexity of technology, advances in biomedicine, and the new options for action which have resulted from these. Additionally, we are becoming conscious of the limits of growth and are discovering long-term global risks related to technological progress. Problems associated with scientific and technological advance and their consequences are accordingly – and to an increasing extent – the subject of political and public debate. *Poiesis & Praxis* is an interdisciplinary forum for reflection and deliberation on the scientific and technological future of our civilization.

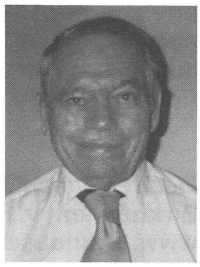
Transformation Groups. 1083-4362. Editor-in-Chief: E. Vinberg. Birkhäuser. v.1, 2002. 4/year. $279.00. http://www.birkhauser.com/journals/tg/index.htm

Transformation Groups accepts research articles containing new results complete proofs.. Topics include: Lie groups and Lie algebras; Lie transformation groups and holomorphic transformation groups; algebraic groups; invariant theory; geometry and topology of homogeneous spaces; discrete subgroups of Lie groups; quantum groups and enveloping algebras; group aspects of conformal field theory; Kac-Moody groups and algebras; and Lie supergroups and superalgebras.

Zebrafish. 1545-8547. Editor: P. Collodi. Mary Ann Liebert Inc. v.1, 2004. 6/year. $424.00. http://www.liebertpub.com/ZEB/default1.asp

The only peer-reviewed journal to focus on the zebrafish that has many valuable features as a model organism for study of vertebrate development. Due to its prolific reproduction and the external development of the transparent embryo, the zebrafish is a prime model for genetic and developmental studies, as well as research in toxicology and genomics. While genetically more distant from humans, the vertebrate zebrafish nevertheless has comparable organs and tissues, such as heart, kidney, pancreas, bones, and cartilage. Demand for zebrafish at National Institutes of Health (NIH) has been fast growing as word spreads that the tiny, black-striped creature makes an excellent supplement and, in some cases, alternative to lab mice for research. The NIH will break ground for a new facility to breed and house zebrafish for intramural research. *Zebrafish* will also include research with other aquarium species such as medaka, fugu, and xiphophorus.

Sci-Tech Book News Reviews — Ellis Mount, Selector



The following section consists of 100 book reviews selected from *Sci-Tech Book News*, reprinted with the permission of Book News Inc. This review journal is published four times a year, each issue reviewing over 2,000 new titles in the physical and biological sciences, mathematics, engineering, computer science, technology, and agriculture. For a sample issue and subscription information, contact Book News Inc. at 5739 NE Sumner Street, Portland, OR 97218. Ph: (503)281-9230; Fx: (503)287-4485; E-mail: booknews@booknews.com.

GE105 3-527-30732-X
Computer-based environmental management.
Seppelt, Ralf.
Wiley-VCH, ©2003 284 p. $110.00
Seppelt (computer science, geographic information systems, and theoretical ecological and numerical environmental modeling, Technical U., Brunswick) explains the mathematical fundamentals of computer-based environmental management, focusing on two main issues: the integration of different modeling approaches and the application of optimization and optimum control theory. Sections cover the following topics: terms, methodologies, and an overview; a translation of conceptual models into equations; a discussion of the results obtained in the context of meta modeling and scientific theory; applications of hybrid models in biology; an environmental assessment report; the mathematical foundations of the integrating modeling concept; the application of environmental models in optimization; and applications of concepts.

PRODUCTION, INDUSTRY, COMMERCE

HD69 0-471-48586-1
It sounded good when we started; a project manager's guide to working with people on projects.
Phillips, Dwayne and Roy O'Bryan.
John Wiley & Sons, ©2004 319 p. $55.00
In independent chapters intended to avert the problems they encountered on a project, two veteran computer engineers- managers discuss the nontechnical aspects of their experiences, how to detect warning signs of trouble, and preventative measures. The majority of pitfalls involve mis-communication with coworkers and clients. A few references are included.

KF3775 1-58576-047-1
Practical guide to environmental management, 9th ed.
Friedman, Frank B.
Environmental Law Inst., ©2003 575 p. $44.95 (pa)
Aimed at environmental and business professionals, this text explains how to create and maintain an effective corporate environmental management program. Corporate environmental lawyer Friedman begins with an overview of the history of environmental law. Other topics include, for example, reducing waste through product redesign, ensuring accurate SEC disclosures, dealing with the press and the public, and creating a climate for innovation. The volume is not indexed.

SCIENCE (GENERAL)

Q121 2003-015731 0-7876-7554-7
The Gale encyclopedia of science, 3d ed; 6v.
Title main entry. Ed. by K. Lee Lerner and Brenda Wilmoth Lerner.
Gale Group, ©2004 4495 p. $525.00
First published in 1991, revised in 1996, and here presented in its third iteration, this six-volume reference is written for high school students and lay adults and is intended as an authoritative, accessible source of information about all fields of science. Arrangement of some 2,000 entries is alphabetical, and, somewhat redundantly, each volume devotes 19 pages to an alphabetical listing of all topics in the set; the subject index is in volume 6. Unfortunately, a thematic listing of entries is not provided. This deficiency makes it difficult to determine how material has been selected or balanced among the disciplines and to understand what types of entries (e.g. biographies, animal descriptions, diseases) predominate. Each signed entry includes a short listing of books, periodicals, and other resources, as well as cross references—which could have been aggregated to prepare a thematic index. Key terms are highlighted in bold type (a distraction for some readers); handily, definitions are included in boxes within the articles, but a comprehensive glossary would have been useful. Photos (most in color) and some diagrams support rather than dominate the text.

Q325 2003-064032 1-4020-7647-9
Machine learning; discriminative and generative.
Jebara, Tony. (The Kluwer international series in engineering and computer science)
Kluwer Academic Pubs., ©2004 197 p. $91.00
Generative approaches to machine learning (a field with roots in artificial intelligence and statistics) use pattern recognition to impose structure for

creating models of phenomena, while discriminative machine learning can be more efficient in solving particular tasks by ignoring larger patterns. Seeing possibilities for exploiting the separate strengths of the two approaches, Jebara (Columbia U.) constructs a combined framework for machine learning that moves from generative models and Bayesian learning to support vector machines and back. Ideally, all parameters of the generative model will be estimated according to the same large-margin criteria of support vector machines and their optimal hyperplane decision boundaries.

MATH, COMPUTERS

QA76.63 1-59033-829-4
Quality of parallel and distributed programs and systems.
Title main entry. Ed. by Peter Kacsuk and Gabriele Kotsis.
Nova Science Publishers, ©2003 117 p. $69.00
Six papers selected from the September 2000 Austrian-Hungarian workshop present special models, metrics, and tools for guaranteeing the quality of parallel and distributed software and systems, particularly supercomputers and clusters. The researchers describe a distributed debugger for use on both Windows NT and Unix platforms, performance monitoring systems, workload models for Internet-based distributed systems, and the performance of OpenMP and MPI on the SGI Origin 2000. The proceedings of the conference, including these papers, was published by Kluwer in 2000 as *Distributed and parallel systems: from instruction parallelism to cluster computing*.

QA76.73 2003-271529 0-596-00372-2
XSLT cookbook.
Mangano, Sal.
O'Reilly & Associates Inc, ©2003 653 p. $39.95 (pa)
Written in a question and answer format, this book offers techniques for using extensible stylesheet language transformations (XSLT) to convert XML documents into other useful forms. The 104 solutions to commons problems address string processing, mathematics, dates and times, document traversal, XML queries, HTML, scalable vector graphics, code generation, debugging, and generic programming.

QA76.76 2003-041859 0-201-72219-4
Software design, 2d ed.
Budgen, D.
Addison-Wesley, ©2003 468 p. $61.00
This advanced software design text offers a non-proprietary view of design issues and a concise overview of current design practices. Budgen (software engineering, Keele U., UK) updates his second edition with a new preface and enhanced recognition of the roles of architectural style, agile methods, design patterns, and the Unified Modeling Language (UML). The text is suitable for industry specialists and advanced undergraduate or postgraduate software design courses. Topics include transferring design knowledge, black box and white box notations, strengths and weaknesses of the stepwise strategy, and designing with components.

QA76.88 0-7695-2053-7
High-performance computer architecture; proceedings.
International Symposium on High-Performance Computer Architecture (10th: 2004: Madrid, Spain)
Computer Society Press, ©2004 311 p. $191.00 (pa)
Papers from a February 2004 conference report on recent work in the field, in the areas of power management, processor design, prefetching, I/O, caches and memory, and scheduling. Some specific topics include improving disk throughput in data-intensive servers, scheduling repay schemes, creating converged trace schedules using string matching, reducing branch misprediction penalty via selective branch recovery, and perceptron-based branch confidence estimation. Other subjects covered include accurate and complexity-effective spatial pattern prediction, link-time path-sensitive memory redundancy elimination, energy-aware synchronization in shared-memory multiprocessors, wavelet analysis for microprocessor design, and stream register files with indexed access. There is no subject index.

QA76.88 2003-065697 1-4020-7580-4
High performance scientific and engineering computing; hardware/software support.
Title main entry. Ed. by Laurence Tianruo Yang and Yi Pan. (The Kluwer international series in engineering and computer science)
Kluwer Academic Pubs., ©2004 316 p. $150.00
Yang (St. Francis Xavier U., Canada) and Pan (Georgia State U., US) have selected papers from "prestigious workshops" and invited others for this collection of 20 papers discussing research in high performance computing for science and engineering applications. Major themes explored are compilation and architectural support, numerical computation, load balancing, performance evaluation, and grid computing. Actual applications discussed include tribology simulations, a large-scale multidimensional simulation for formation process of carbon cluster on a parallel computer, and adaptive selection of materialized queries in a mediator for the integration of distributed information resources.

QA76.92003-17498 1-59327-007-0
Hacking; the art of exploitation.
Erickson, Jon.
No Starch Press, ©2003 241 p. $39.95 (pa)
Erickson, a cryptologist and security specialist, introduces the spirit and theory of computer

hacking as well as the science, allowing readers to understand the hacker mindset and thwart potential attacks. He explains how to exploit programs using buffer overflows and format strings, write printable ASCII polymorphic shellcode, defeat non- executable stacks by returning to libc, and crack encrypted 8-2.11b wireless traffic using the FMS attack.

ASTRONOMY

QB501 2003-059387 1-4020-1428-7
Physics of the solar system; dynamics and evolution, space physics, and spacetime structure.
Bertotti, Bruno et al. (Astrophysics and space science library; v.293)
Kluwer Academic Pubs., ©2003 701 p.
$229.00
Bertotti (Department of Nuclear and Theoretical Physics, University of Pavia, Italy) covers most areas in the physics of the solar system, with special emphasis on gravitational dynamics and on the variety of objects in the planetary system and their long-term evolution. Relevant physical principles are discussed in the first chapter and developed as the need arises, and special chapters and introductory sections are included especially for those with less background. Coverage progresses from the gravitational field of an isolated body, planetary rotation, gravitational torques and tides, the interior of the Earth, and planetary magnetism, to the origin of the solar system, artificial satellites, telecommunications, and precise measurements in space. Familiarity with undergraduate physics is assumed. The book will be useful for post-graduate students and researchers in physics.

PHYSICS

QC174 2003-062006 1-4020-1674-3
Explicitly correlated wave functions in chemistry and physics; theory and applications.
Title main entry. Ed. by Jacek Rychlewski. (Progress in theoretical chemistry and physics; v.13)
Kluwer Academic Pubs., ©2003 556 p.
$180.00
Rychlewski (Adam Mickiewicz University, Poland) collects material on the theory of explicitly correlated (EC) wave functions and applications in chemistry and molecular and atomic physics. The book begins with a chapter on the theory of electron correlation and the following three chapters describe different types of functions that can be used to solve the electronic Schrödinger equation for atoms and molecules. The book goes on to discuss effects that go beyond the Born-Oppenheimer approximation: the theory of relativistic effects, solution of the Dirac-Coulomb equation, and relativistic corrections using ECG functions. Applications are described related to the use of EC functions to calculate atomic and molecular properties and to study positronic systems, resonance states of atoms, and nuclear dynamics of the hydrogen molecular ion.

QC176 1-59033-224-5
Exploring the quantum/classical frontier; recent advances in macroscopic quantum phenomena.
Title main entry. Ed. by Jonathan R. Friedman and Siyuan Han.
Nova Science Publishers, ©2003 479 p.
$95.00
The field of macroscopic quantum phenomena has been around for more than 20 years—since work by Leggett and collaborators introduced the notion that it was possible to have macroscopic objects with microscopic energy scales, thus opening the possibility of actually realizing a version of Schrödinger's cat in the lab—but there's still no clear consensus about what MQP means. Fourteen chapters by US, European, Russian, and Japanese physicists review recent developments in the field with the intention, the editors say, of providing a springboard for further study and investigation.

QC485 2003-058217 1-4020-1538-0
Radiation hazard in space.
Miroshnichenko, Leonty I. (Astrophysics and space science library; v.297)
Kluwer Academic Pubs., ©2003 238 p.
$119.00
Incorporating new data not previously available in the review literature, Miroshnichenko (Institute of Terrestrial Magnetism, Ionosphere, and Radio Wave Propagation of the Russian Academy of Sciences) provides a self-consistent portrait of the Earth's electromagnetic and radiation phenomena. After summarizing the observational and theoretical findings related to galactic cosmic rays, solar cosmic ray, and intensive belts of trapped charged particles in the terrestrial magnetosphere (the three main sources or energetic particles in space), he describes techniques for space radiation physical and statistical modeling. He also reviews some of the more recent theoretical and statistical modeling work related to radiation hazards in space.

QC611 2001-026953 0-471-35572-0
Survey of semiconductor physics, 2d ed.; 2v.
Title main entry. Ed. by Karl W. Böer
John Wiley & Sons, ©2002 1169 p.
$545.00
Böer (now at the U. of Delaware; for many years he taught physics at Humboldt U. in Germany) has completely revised his first edition (published in 1990-1992), eliminating descriptions of devices and selecting subjects to create a survey focusing on crystalline, amorphous, and superlattice-type semiconductors. Forty-three chapters are presented in two volumes, the first concerned with electrons and other particles, and the second, electronic transport, with a section for appendices, a bibliography, and index. Coverage includes bonding and structure, phonons, energy bands, photons, defects, generation- recombination, and

kinetics. A sampling of more specific topics: the structure and growth of semi-conductors, surface analysis, crystal growth mechanism, phononic effects at surfaces, bands and band gaps in solids, photon-phonon interaction, nonlinear optical effects, shallow- and deep-level centers, carrier generation, luminescence, and orbital and spin relaxation.

QC759 2003-56453 1-4020-1506-2
Optimization and inverse problems in electromagnetism.
Title main entry. Ed. by Marek Rudnicki and Slawomir Wiak.
Kluwer Academic Pubs., ©2003 336 p. $138.00
Thirty-three papers are presented from an international workshop for applied mathematicians, computer scientists and electrical engineers, held in September, 2002, by the Academy of Humanities and Economics in Lódz, Poland. The contributions are organized into sections of general papers, methodology—subdivided into genetic algorithms, probability theory, optimization techniques, and applications—and applications—subdivided into optimization techniques of devices, drives, transformers and special problems. A sampling of topics: how nature inspires methodologies in computational electromagnetics, using quasi random sequences in genetic algorithms, exponential family and inverse problems, and optimization of permanent-magnet DC motors using orthogonal arrays. No subject index.

CHEMISTRY

QD462 2003-058219 1-4020-1371-X
Theoretical chemistry and physics of heavy and superheavy elements.
Title main entry. Ed. by U. Kaldor and S. Wilson. (Progress in theoretical chemistry and physics; v.11)
Kluwer Academic Pubs., ©2003 565 p. $165.00
Since relativity influences the structure of heavy atoms in the Periodic Table, special methods are required to calculate the behavior of their fundamental components. This text provides a detailed description of the application of relativistic quantum mechanics to the many-body problem in the theoretical chemistry and physics of heavy and superheavy elements. Written by Kaldor (Tel Aviv U.), Wilson (Rutherford Appleton Laboratory, England) and other researchers, 12 contributions discuss such topics as the chemistry of the heaviest elements, relativistic electron correlation theory, and QED effects in atoms.

QD511 2003-020165 1-59033-854-5
Chemical reactions in liquid and solid phase; kinetics and thermodynamics.
Title main entry. Ed. by G.E. Zaikov and A. Jiménez.
Nova Science Publishers, ©2003 199 p. $97.00
This collection examines the influence of liquid and solid states during radical, ionic, and molecular reactions, specifically how cage effect, diffusion hindrance, donor-acceptor interaction, electrostatic interaction, dispersion forces and other factors affect the rates, mechanism, and direction of chemical reactions. Topics of the 11 papers include spherical hydrogel particles for endovascular embolization, the synthesis and thermal degradation of phenolic resins, monomolecular chain termination in dimethacrylate postpolymerization, and calculating the effect of chain deformation on macromolecule scission. Most of the researchers work in Russia.

QD543 2002-038142 0-19-851100-0
The role of the solvent in chemical reactions.
Buncel, E. et al. (Oxford chemistry masters; 6)
Oxford U. Press, ©2003 159 p. $45.00 (pa)
Addressing a gap in the coverage of solvent chemistry in standard inorganic and organic chemistry texts, this book provides a semi-quantitative and thermodynamically-based approach to solvent chemistry that is accessible to both senior undergraduates and postgraduates. Buncel (Queen's U. at Kingston, Ontario, Canada) and co-authors cover topics including intermolecular potentials, hydrogen bonding, linear free energy relationships, quantum-mechanical methods, dipolar aprotic solvents, and reactions in hydrogen fluoride. The text is interspersed with useful examples taken from both inorganic and organic chemistry.

QD601 2003-064055 1-4020-1305-1
Handbook of nuclear chemistry; 5v.
Title main entry. Ed. by Attila Vértes et al.
Kluwer Academic Pubs., ©2003 2441 p. $1,260.00
This extensive reference comprises five volumes covering: the basics of nuclear science; elements and isotopes; chemical applications of nuclear reactions and radiations; radiochemistry and radiopharmaceutical chemistry in life sciences; and instrumentation, separation techniques, and environmental issues. Topics include the history of nuclear and radiochemistry; basic properties of the atomic nucleus; interaction of radiation with matter; statistical aspects of nuclear measurements; the origin of the chemical elements; isotopic paleoclimatology; radioactive dating methods; chemistry of transactinides; superheavy elements; hot atom chemistry; Mössbauer spectroscopy; positron annihilation spectroscopies; exotic atoms and Muonium; neutron scattering techniques in chemistry; applications of neutron generators; chemical applications of accelerators; tracer technique; reactor-produced medical radionuclides; ^{11}C- labeling chemistry and compounds; dosimetry and biological effects of ionizing radiation; technical application of nuclear fission; solvent extraction and ion exchange radiochemistry; environmental radiation protection; and radioactive waste management. Each section includes an introduction

and references. The three editors and many contributors are from Hungary; others are from the US, Russia, Japan, Sweden, Germany, Switzerland, Denmark, Belgium, England, and Austria.

QD719 2003-055212 0-8493-1348-1
CRC handbook of organic photochemistry and photobiology, 2d ed.
Title main entry. Ed. by William M. Horspool and Francesco Lenci.
CRC Pr., ©2004 — p. $495.00
This massive handbook (nearly 3000 pages) contains 147 authored entries by specialists worldwide, edited by Horspool (emeritus, organic chemistry, U. of Glasgow, Scotland) and Lenci (biophysics, CNR, France). There are 66 new chapters in the second edition on topics that include photosensory biology, photochemotherapy, photodynamic therapy, photoecology, photosynthesis, spectroscopy, phototropism, biomolecular photonics, photomovements, photomorphogenesis, and optobioelectronics. The new methods of photoelectron transfer and irradiation of compounds in the solid, crystals, and within supramolecular cages are discussed in several chapters. Among the other topics: C-X bond fission in alkene systems, photochemistry of hydroxyarenes, photo-Fries reaction and related processes, photochemical reactivity of azides, oxidation of aromatics, photochemistry of homoquinones, environmental UV action spectroscopy, and DNA damage and repair.

GEOLOGY

QE711 2003-053041 1-4020-1443-0
High-resolution approaches in stratigraphic paleontology. (CD-ROM included)
Title main entry. Ed. by Peter J. Harries. (Topics in geobiology; v.21)
Kluwer Academic Pubs., ©2003 474 p. $175.00
Geologists mostly from US universities explain how stratigraphic analysis techniques that have been developed in geology to glean data from the record at increased levels of temporal and spatial resolution can be applied to the fossil record. They emphasize how such approaches are both limited by and can help overcome some of the inherent difficulties in interpreting the remains of living creatures. Among their topics are a comparison of the resolving power of traditional biostratigraphy and computer-assisted correlation, the variation in adult size of scaphitid ammonites from the Upper Cretaceous Pierre Shale and Fox Hills Formation, and the relationship between sea level and species richness. The disk, which requires MS Windows, contains programs for solving stratigraphic correlation and seriation problems as constrained optimization.

BIOLOGY

QH541 0-415-29998-5
Manmade closed ecological systems.
Gitelson, I.I. et al. (Earth Space Institute book series; v.9)
Taylor & Francis, ©2003 402 p. $110.00
The idea of the biosphere or closed ecosystem is of singular importance for the project of space exploration. Russian scientists Gitelson and Lisovsky (both of the Institute of Biophysics of the Russian Academy of Science), in collaboration with American MacElroy (NASA Ames Research Center) present an overview of technical aspects of the topic, first examining the basic concepts and historical development of the field. Chapters then look at possible components of a closed human life support ecosystem, cultivation of microalgae and higher plants, and microbial life. The Bios-1 and Bios-2 experimental facilities are assessed as well.

TECHNOLOGY (GENERAL)

T55 2003-014217 0-471-46739-1
Global materials compliance handbook.
Phyper, John et al.
John Wiley & Sons, ©2004 477 p. $89.95
To deal with global legislation on hazardous chemicals and dangerous goods, many organizations are developing their own materials compliance systems (MCSs). This handbook for those seeking to create an MCS reviews regulatory issues surrounding purchasing, research and development, testing, manufacturing, selling, and distribution of regulated materials. A section with country-by-country regulatory coverage explains requirements for chemical registration and listing, Materials Safety Data Sheets and product labels, and transportation, import, and export. A second section covers the impact of tighter security on the supply chain, MCS management, and MCS information systems. Phyper has coauthored several books on management systems and environmental legislation.

T173 2003-019019 0-309-08908-5
A century of innovation; twenty engineering achievements that transformed our lives.
Constable, George and Bob Somerville.
Joseph Henry Press, ©2003 248 p. $45.00
Sponsored by the National Academy of Engineering, this work tells the story of engineering innovations in the 20th century. The authors provide heavily illustrated chapters on electrification, the automobile, the airplane, water supply and distribution, spacecraft, air conditioning and refrigeration, health technologies, lasers and giver optics, nuclear technologies, and high performance materials. Each chapter offers a brief narrative history of the development of the technology, illustrated descriptions of the technology's functioning, a "perspective" from someone involved in the field, and a chronology of important events.

T385 2003-009539 1-58450-299-1
Graphics programming methods. (CD-ROM included)
Title main entry. Ed. by Jeff Lander.
Charles River Media, ©2003 406 p. $49.95
Thirty-four contributions share techniques for building geometric models, animating objects, and rendering scenes. Topics include collision detection of deformable volumetric meshes, higher order surfaces using curved point normal triangles, filling texture holes using the Euclidean distance map, Metropolis sampling in random walk global illumination algorithms, and quantization of true color images with opacity information. The CD-ROM contains DirectX 9.0 SDK, the OpenGL utility kit, and the Simple DirectMedia library. Some color plates are provided.

ENGINEERING (GENERAL, CIVIL)

TA166 2002-044664 0-7680-0975-8
What engineers and managers need to know about human factors.
Gabriel, Richard F.
Soc./ Automotive Engin'rs, ©2003 253 p. $49.95 (pa)
Gabriel (a human factors researcher in aviation) argues that systematic attention to human factors can improve safety and efficiency in both the operation and the maintenance of the product and increase the cost-effectiveness of the design process itself. Written for engineers and managers with no formal training in the life and social sciences, this book outlines the essential knowledge for evaluating the need to include human factors research in the design of a particular product.

TA169 2003-63834 1-58053-372-8
Systems reliability and failure prevention.
Hecht, Herbert. (Artech House technology management library)
Artech House, ©2004 230 p. $79.00
Engineering consultant Hecht provides an introduction to the techniques and practice of reliable systems engineering. He looks at analysis tools, particularly failure modes and effects analysis, fault tree analysis, and sneak circuit analysis. Issues of testing for design margins, environmental extremes, and fatigue are explored. Redundancy techniques and software reliability are also examined. The costs and benefits of the various techniques and tools are discussed.

TA174 90-77017-75-5
Metal structures; design, fabrication, economy; proceedings.
Interanational Conference on Metal Structures; ICMS-03 (3d: 2003: Miskolc, Hungary) Ed. by Károly Jármai and József Farkas.
Millpress Science Publishers, ©2003 397 p. $94.00
Proceedings of an April 2003 conference held in Miskolc, Hungary, presenting the most significant, up-to-date problems of metal structures. Fifty-eight contributions are organized into eight sections on materials, fatigue of welded joints; thin-walled structures; tubular structures; frames; plates and shells; special optimization problems; applications; and special problems of applied mechanics. A sampling of topics: assessment of lamellar tearing resistance of plates for welded structures, buckling of thin-walled columns with open section, full-scale tests of a space truss roof system, cyclical behavior of connections with end-plate, minimum cost design of horizontal vessels on saddles, shakedown loading optimization of circular plates, conceptual design of a DutchEVO car body structure, and analysis of behavior of a horizontal safety system. Millpress Science Publishers is in the Netherlands; currently there is no US distributor.

TA357 2003-42758 90-5809-395-6
Applied hydraulic transients for hydropower plants and pumping stations.
Popescu, Mihail et al.
A.A. Balkema, ©2003 329 p. $109.00
Drawing on theoretical and applied results obtained by the authors over the past 20 years, this book is devoted to problems of hydraulic computation in the design of a significant number of hydroelectric power plants and pumping stations in Romania that are now in operation. Popescu (civil engineering, University of Constantza, Romania) deals with transient hydraulic computation for hydroelectric plants and pumping stations using numerical methods, covering the protection of pumping stations against waterhammer, mass oscillation in hydraulic surge systems, and computation of unsteady motions. The book is distributed in the US by Ashgate. There is no subject index.

TA401 2003-106812 0-87339-561-1
Modeling, control and optimization in ferrous and nonferrous industry.
Symposium on Modeling, Control and Optimization in Ferrous and Nonferrous Industry (2003: Chicago, IL) Ed. by Florian Kongoli et al.
TMS (Minerals, Metals...Soc.), ©2003 573 p. $123.00
A November 2003 symposium brought together work on both ferrous and non-ferrous extraction and processing industries as well as mechanical aspects in modeling, control, and optimization. Papers from the symposium examine aspects of control, optimization, automation, and computer modeling in iron, steel, and nonferrous metal extraction and processing as well as mechanical working. Specific topics include thermodynamics, bio-processing, feeds, furnaces, slags, molten mattes, metals, aqueous processing, deformation, quenching, casting, welding, heating, grain growth, precipitation, and cooling processes. A distinct emphasis is given to process modeling and simulation and computer applications and to the

ways in which they enhance the control and optimization of the above-named processes.

TA403 0-8247-4746-1
Modeling and simulation for material selection and mechanical design.
Title main entry. Ed. by George E. Totten et al. (Mechanical engineering series; no.166)
Marcel Dekker, ©2004 509 p. $250.00
Engineers and metallurgists from Germany, Canada, Russia, and Japan summarize and demonstrate key numerical relationships used in developing computer modeling and in applying them at various stages in the material production process. They write primarily for designers, mechanical and materials engineers, and metallurgists, but suggest that the collection could be used as a textbook for a graduate or advanced undergraduate engineering course. The six substantial studies consider a mathematical model for predicting microstructural evolution and mechanical properties in hot-rolled steels, designing for the control of residual stress and distortion, designing fastening systems, and other topics.

TA418 0-415-30397-4
Analysis of residual stress by diffraction using neutron and synchrotron radiation.
Title main entry. Ed. by M.E. Fitzpatrick and A. Lodini.
Taylor & Francis, ©2003 354 p. $129.95
Not the post-trauma syndrome so popular among psychologists, but residual stresses in materials and components introduced by such processes as mechanical forming operations, welding, and heat treatments. Engineers and materials scientists from Europe and the US consider how to determine such residual stress experimentally using the two methods. Emphasizing neutron diffraction method, the more established of the two, they cover general applications of the methods to materials research, methods and problems in determining residual stress by diffraction, measuring techniques, and areas of study. Then they survey applications, among them shot peening, composite materials, and materials for nuclear fusion applications.

TA418 2003-000696 0-8155-1492-1
Coating materials for electronic applications; polymers, processes, reliability, testing.
Licari, James J.
Noyes Publications, ©2003 531 p. $145.00
Licari (AvanTeco) characterizes the chemistry, properties, and application of low dielectric constant coatings for controlled impedance, high frequency circuits. In addition to the traditional acrylics, polyesters, polyvinyls, epoxies, and polyurethanes, the new breed of silicones, polyimides, parylenes, and fluorocarbons are also described. Topics include surface preparation, application methods, curing and polymerization processes, environmental exposure tests, chemical tests, conformal coatings for printed wiring assemblies, and coatings for space applications. The book will be of interest to both electronics design engineers who must select coatings and materials engineers who develop the coatings. Co-published by Noyes and Springer-Verlag GmbH and distributed by William Andrew Publishing.

TA418 0-415-30826-7
Fibers and composites.
Title main entry. Ed. by Pierre Delhaés. (World of carbon series; v.2)
Taylor & Francis, ©2003 245 p. $99.95
The series summarizes results from basic and applied research during the previous century on specific aspects of elemental carbon in a condensed phase, mainly relating to material science. Chemists and material scientists mainly from France, but also other European countries and the US, cover carbon fibers, the chemical vapor deposition and chemical vapor infiltration processes, and properties of matrices and composites. The topics include the formation of microstructure in mesophase carbonfibers, liquid impregnation techniques for carbon-carbon composites, and the role of chemistry in advanced carbon-based composites.

TA418 2003-047291 1-58488-442-8
Mechanics of elastic composites.
Cristescu, Nicolaie Dan et al. (Modern mechanics and mathematics; 1)
Chapman & Hall / CRC, ©2004 682 p. $129.95
Cristescu explains the theory that provides the foundation for the development and use of composite materials. Beginning with an introductory review of tensor calculus and the fundamentals of linear elastostatics, he explores the three-dimensional theory of elastic composites, from the classical aspects of laminates to recently developed methods related to the buckling of fiber-reinforced composite strips, stability analysis of composite laminates, and brittle fracture mechanics. Many of these results are drawn from Eastern European research that was previously unavailable in the West. With some 400 problems, many of them solved, the book can be used as a graduate text and as a reference for engineers.

TA418 2003-061988 1-4020-7630-4
Nanoscale phenomena in ferroelectric thin films.
Title main entry. Ed. by Seungbum Hong.
Kluwer Academic Pubs., ©2004 288 p. $145.00
Eleven contributions present recent findings about the electrical characterization of nanoscale ferroelectic capacitors, and nano domain manipulation and visualization in ferroelectric materials. The aim of the experiments is to understand unexplained macroscopic phenomena and develop ferroelectric thin films that exhibit novel and improved physical and chemical properties due to their nanoscale size. Among the topics are the effect of ferroelectric film thickness and lateral size variation on the performance of capacitors,

polarization switching and fatigue of ferroelectric thin films studies by piezoelectric force microscopy, domain switching and self-polarization in perovskite thin films, and scanning probe microscopy of ferroelectrics at MHz frequencies.

TA418 3-527-30359-6
Nanocomposite science and technology.
Ajayan, Pulickel M. et al.
Wiley-VCH, ©2003 230 p. $135.00
Materials scientists from Rensselaer Polytechnic Institute and the U. of Illinois at Urbana Champaign discuss three areas of nanocomposites that they feel provide the basic pieces that define the overall nature of the field. They first look at nanocomposites based on inorganic materials such as metals and ceramics and applications. Polymer-based and polymer-filled nanocomposites are then discussed with an emphasis on interface engineering for optimum performance. Naturally occurring systems of nanocomposites and their lessons for engineering are then explored before a final chapter on nanocomposite modeling.

TA418 0-415-29985-3
Space; technologies, materials, structures.
Title main entry. Ed. by B.E. Paton. (Welding and allied processes series; v.2)
Taylor & Francis, ©2003 567 p. $139.95
In 2000, the National Academy of Sciences of Ukraine in Kiev published the original Russian-language edition, which compiled some 70 scientific articles from highly specialized journals between 1964 and 2000. The English edition has been updated with articles from 2000 to 2002, enlarged with a number of articles and papers not included in the mother volume, and corrected. The references have also been expanded. The topics include technology and materials science; research into instrumentation; and ergonomic problems of training cosmonauts and astronauts to conduct in-vehicle and extra-vehicle technological experiments, monitor near-earth space, repair and maintain space vehicles and their systems, and construct various- application large-sized structures and maintain them during long- time operation under extreme conditions.

TA440 2003-063657 0-7844-0707-X
Life-cycle performance of deteriorating structures; assessment, design, and management.
Title main entry. Ed. by Dan M. Frangopol et al.
Am. Society of Civil Engineers, ©2004 444 p. $79.00 (pa)
Three bodies combined their March 2003 workshops in Lausanne, Switzerland, to share their insights into the life-cycle cost analysis and design of civil infrastructure systems, and the probabilistic modeling of deterioration processes in concrete structures. The 43 papers published here represent most of the presentations. The keynote papers cover risk-setting policy strategies for hazards, probabilistic performance prediction for deteriorating structures under different maintenance strategies, life-cycle cost versus safety level versus service life, and the corrosion and cracking of reinforced concrete.

TA460 2003-008011 0-419-24190-6
Buckling of thin metal shells.
Teng, J.G. and J.M. Rotter.
Spon Press, ©2004 493 p. $136.00
Teng (Department of Civil and Structural Engineering, Hong Kong Polytechnic University) and Rotter (civil engineering, Institute for Infrastructure and Environment, University of Edinburg, UK) compile research on the prevention of buckling in thin-walled metal shell structures, useful for designers, researchers, and code writers involved with thin-walled metal shell structures, including silos, tanks, pipelines, biodigestors, chimneys, towers, offshore platforms, aircraft, and spacecraft. After an introduction to the field, chapters are grouped together according to the different fundamental loading types for a cylinder: axial compression, circumferential compression, and membrane shear. The book deals with cylinders under external pressure, problems in which membrane shear stresses play a major role, conditions where the cylindrical shell meets another shell segment, and the behavior of rings at junctions.

TA647 2003-056814 1-4020-1654-9
Analysis of geometrically nonlinear structures, 2d ed. (CD-ROM included)
Levy, Robert and William R. Spillers.
Kluwer Academic Pubs., ©2003 272 p. $156.00
Levy (Israel Institute of Technology, Israel) and Spillers (New Jersey Institute of Technology) had added new material on three-dimensional beams and shells to this second edition of a book/CD-ROM package for practicing engineers. They provide a simple extension of the methods of linear structural analysis to the case of geometrically nonlinear effects. Coverage progresses from linear structure analysis and exact analysis of trusses, through nonlinear analysis of plane and space frames, nonlinear analysis of membranes, and cablenets and fabric structures. Appendices explain determinants, the rotation matrix, and perturbation methods applied to plane beams. The accompanying CD-ROM contains FORTRAN source code and data files.

TA660 2003-043256 0-471-42989-9
Theories and applications of plate analysis; classical, numerical, and engineering methods. (CD-ROM included)
Szilard, Rudolph.
John Wiley & Sons, ©2004 1024. p. $250.00
Szilard (emeritus professor, structural mechanics, University of Hawaii) addresses a range of problems related to the static, dynamic, and elastic

stability analysis of plates and describes analytical, numerical, computer-aided, and engineering solution techniques, in this book/CD-ROM package. Using SI units throughout, he develops all mathematical tools within the book to work with such topics as linear, nonlinear, and moderately thick plate problems, finite different and gridwork methods, finite element and finite strip methods, computer- based plate analysis, yield-line methods, and free and forced vibrations of plates. The accompanying CD-ROM contains 170 plate formulas and a finite element program system for static and dynamic analysis of real-life plate problems. The book will be useful for engineers and graduate students in civil, mechanical, aeronautic, marine, architectural, and mining engineering.

TA740 90-5809-269-0
Environment-friendly techniques of rock breaking. Res, Janus et al.
A.A. Balkema, ©2003 160 p. $85.00
Thermal jets, high-pressure jets, expansive material, plasma jets, and other methods that lead to breakdown of rock structure are "environment friendly *per se*," declare the authors (of the Academy of Mining & Metallurgy at Cracow, Poland and the Bengal Engineering College, India), in that they avoid problems of ground vibration, air blast, or flyrock. They describe the engineering theory behind a number of these methods, devoting chapters to chemical methods, infrared radiation generators, thermal methods, electrohydraulic phenomenon, high-pressure jets, and plasma blasting. Distributed in the US by Ashgate.

TA1520 2003-059335 0-07-138519-3
Photonics rules of thumb; optics, electro-optics, fiber optics, and lasers, 2d ed.
Friedman, Ed and John Lester Miller.
SPIE, ©2003 418 p. $54.95
Offering 300 photonics guidelines, this reference includes aids for assessing the impact of design changes, pinpointing trouble spots, collecting necessary information, and verifying specifications. Chapters concentrate on topics like astronomy, atmospherics, cryogenics, detectors, displays, the human eye, lasers, material properties, ocean optics, radiometry, target phenomenology, and visible and television sensors.

TA1540 0-7503-0912-1
Practical holography, 3d ed.
Saxby, Graham.
IOP Publishing Ltd., ©2004 482 p. $85.00 (pa)
Saxby (formerly of the U. of Wolverhampton, UK) details the techniques used to make hologram images, from simple single-beam holograms to multicolor art holograms and complex holographic stereograms. After setting out the principles of holography, based on a Fourier treatment of image formation, he describes the practices of display holography, including information on techniques, how to set up a laboratory, and the developing of images. He also includes a section on applications in an array of scientific fields. The mathematics of holography are kept to a minimum and largely contained in an appendix.

TA1635 2003-060762 0-8493-7006-X
Handbook of video databases; design and applications.
Title main entry. Ed. by Borko Furht and Oge Marques.
CRC Pr., ©2004 1211 p. $129.95
Offering an overview of the state of the art in video database technology, this collection explores techniques for video modeling and representation, segmentation and summarization, audio and video indexing and retrieval, video transmission, and video processing. Topics of the 45 chapters include highlight detection in sports videos, video shot detection using color anglogram and latent semantic indexing, cost effective and scalable video streaming, continuous display of video object using heterogeneous disk subsystems, searching multimedia data types by similarity, and a system for segmenting news video into semantic units using a learning-based approach. The volume is appropriate for researchers and graduate students.

HYDRAULIC ENGINEERING

TC145 2003-63908 0-7844-0674-X
Water resources engineering; handbook of essential methods and design.
Prakash, Anand.
Am. Society of Civil Engineers, ©2004 348 p. $99.00
Prakash has 45-plus years of experience working as a water resources engineer and consultant on hydrologic and hydraulic projects throughout the world. Written for consulting engineers with a bachelors degree in engineering or applied science and some professional experience, and graduate students training to enter the consulting industry, his text covers methods and equations applicable to situations with various levels of data availability, particularly where available site-specific information is inadequate. The emphasis is on solving practical problems with a minimum literature search, and applying theoretical equations to real-world conditions. Requires knowledge of fundamental hydraulics, fluid mechanics, and hydrology, and access to standard texts on these subjects.

TC530 92-1-120153-5
Guidelines on participatory planning and management for flood mitigation and preparedness.
Title main entry. Ed. by Economic and Social Commission for Asia and the Pacific. (Water resources series; no.82)
United Nations Publications, ©2003 129 p. $30.00 (pa)

This report, based on a November 2001 workshop held in Bangkok, Thailand, presents guidelines and priorities in participatory planning and management for flood mitigation and preparedness. The guidelines will assist decision makers, planners, and practicing engineers in their efforts to enhance the effectiveness of stakeholders' participation in flood mitigation and preparedness within the context of integrated water resources management. There is no subject index.

ENVIRONMENTAL TECHNOLOGY

TD173 2003-78 0-02-865700-4
Pollution A to Z; 2v.
Title main entry. Ed. by Richard Stapleton.
Macmillan Publishing Co., ©2004 756 p.
$175.00
This encyclopedia presents 264 entries written by scientists, professors, educators, and laypeople, explaining key concepts, current issues, research, and legislation in several global and local areas related to pollution of air, land, space, and water. These topics are complemented by historical overviews, biographical sketches, and career information, as well as information on related movements, organizations, and political parties. Glossary definitions and acronyms, sidebars, cross-references, and some 200 color photos and illustrations are included. The encyclopedia is designed for a wide readership of high school and college students, professionals, and general readers.

TD370 0-86587-846-3
Clean water handbook, 3d ed.
Gallagher, Lynn M. et al.
Government Institutes Inc., ©2003 442 p.
$125.00 (pa)
Writing for environmental professionals, Gallagher (of Swidler Berlin Shereff Friedman, LLP) presents an introduction to the legal environment of the Clean Water Act and related U.S. law and regulation. This new edition offers expanded treatment of the watershed approach to water pollution control, discussion of changes in the EPA's Effluent Guidelines program, and coverage of judicial EPA interpretations of regulatory issues.

TD426 90-5809-629-7
Urban groundwater pollution.
Title main entry. Ed. by David N. Lerner. (International contributions to hydrogeology; 24)
A.A. Balkema, ©2004 277 p. $99.00
An international group of contributors with specialties in public and environmental health, civil and structural engineering, groundwater studies, geological and geographical sciences, and other fields explain the nature and value of urban groundwater and types of pollutants and their causes. The volume also provides detailed discussion of six different urban environments (mature industrial cities; arid-zone cities; weathered crystalline aquifers in sub-Saharan Africa; cities overlying karst aquifers; alluvial aquifer systems; and shallow aquifers in Mediterranean climates), with case studies illustrating the relevant issues. There is no subject index. Distributed in the US by Ashgate.

TD657 0-86587-816-1
Stormwater discharge management; a practical guide to compliance.
Title main entry. Ed. by Frank R. Spellman and Joanne E. Drinan.
Government Institutes Inc., ©2003 426 p.
$89.00 (pa)
As of March 10, 2003, the U.S. Storm Water Phase II Rule of the National Pollutant Discharge Elimination System came into effect for previously exempt municipal storm sewer systems. In addition to summarizing the Phase II rule, this handbook for stormwater compliance program managers also provides information on EPA practices, other stormwater laws and regulations, permitting options, the design and implementation of stormwater pollution prevention plans, construction sediment and erosion control, and sampling and monitory practices.

TD878 2003-055249 1-56670-610-6
Practical handbook of soil, vadose zone, and ground-water contamination; assessment, prevention and remediation, 2d ed.
Boulding, Russell and Jon S. Ginn.
Lewis Publishers, ©2004 691 p. $159.95
Boulding, an environmental consultant, and Ginn, an engineering professional, have added new information on site characterization and remediation that has appeared since 1995 to this second edition of a reference on assessment, remediation, and control of contamination on and below the ground surface. Written for remediation engineers, ground water and soil scientists, regulatory personnel, researchers, and field investigators, this second edition overviews how to plan investigations at DNAPL-contaminated sites, and includes new sections on direct push sensing methods, alcohol tracers, phytoremediation, passive soil vapor extraction, and passive diffusion sampling.

TD897 0-8247-4694-5
Industrial combustion pollution and control.
Baukal, Charles E. Jr. (Environmental science and pollution control series)
Marcel Dekker, ©2004 904 p. $235.00
Written for practicing engineers, this book reviews the fundamentals of combustion and emissions, characterizes the types of pollutants released from industrial combustion systems, and examines pollution from specific applications of industrial combustion. Baukal (John Zink Company) describes techniques and equipment for simulating processes on a computer and measuring pollutants in exhaust gas streams; identifies the environmental effects

of nitrogen oxides, unburned combustibles, sulfur oxides, particulates, noise, and vibration; and offers strategies for reducing emissions. The furnaces and process heaters used in the production of refined petroleum, metal parts, glass, and paper are pictured in detail. Some black and white photographs are provided.

TG5 90-5809-606-8
Recent developments in bridge engineering; proceedings.
New York City Bridge Conference (2nd: 2003: New York, NY). Ed. by K.M. Mahmoud.
A.A. Balkema, ©2003 373 p. $145.00
This collection of 29 papers from the October 2003 conference shares recent experience with building cable-supported bridges and concrete segmental bridges, and summarizes studies on fatigue analysis, bridge health monitoring, seismic retrofits, and advanced materials. Two of the papers investigate the effects of wind and earthquake on the new Tacoma Narrows suspension bridge. Other topics include the effectiveness of fairings on a suspension bridge, the strength and ductility of tension flanges in girders, long-term remote monitoring of prototype orthotropic deck panels on the Bronx Whitestone Bridge, and high performance lightweight concrete bridges in Norway. Black and white photographs are provided, but no subject index. Distributed by Ashgate.

BUILDING CONSTRUCTION

TH437 90-5966-008-0
Innovative developments in architecture, engineering and construction; proceedings.
Conference on Innovation in Architecture, Engineering and Construction (2d: 2003: Loughborough, UK) Ed. by C.J. Anumba.
Millpress Science Publishers, ©2003 766 p. $116.00
Proceedings of a June 2003 conference held in Loughborough, UK. Sixty-eight contributions are organized into sections on innovation as it relates to design, IT in design and construction, construction technologies, novel construction and planning and scheduling methods, learning, approaches to construction and project management, industry practice, information and knowledge management, approaches to project delivery, and construction processes. A sampling of topics: human vision mimicry for design; rebuilding e-learning in construction; lightweight, blast-resistant doors for retrofit protection against the terrorist threat; environmental quality and the productive workplace; learning from biological systems; and strategic client briefing using performance indicators. Millpress Science Publishers is in the Netherlands; currently there is no US distributor.

TH1461 2003-062863 0-7844-0705-3
Engineering considerations for lift-slab construction.
Zallen, Rubin M. and David B. Peraza.
Am. Society of Civil Engineers, ©2004 75 p. $35.00 (pa)
The 1987 collapse of L'Ambiance Plaza in Bridgeport, Connecticut, demonstrated the need to re-evaluate the engineering of lift-slab construction. In this re-evaluation, Zallen and Peraza, both affiliated with the Task Committee on Lift-Slab Construction of the American Society of Civil Engineers' Technical Council on Forensic Engineering, examine theories on the cause of the 1987 collapse, address engineering requirements for lift-slab construction, and present recommendations on lifting equipment, construction loads, and planning for lift-slab projects. The book will be of interest to engineers, architects, and lift-slab contractors.

TH6010 1-86058-416-0
Handbook of mechanical in-service inspection.
Matthews, Clifford.
Professional Engineering Pub., ©2004 690 p. $230.00
Matthews, an engineering consultant, emphasizes the compliance aspects and duty-of-care requirements placed on plant owners, operators, and inspectors in this handbook covering the inspection of pressure equipment and other mechanical plant equipment such as cranes and rotating equipment. Chapters on essential principles examine the inspection business, roles and duties of the in-service inspector, and management of the in-service inspection, then look at different types of inspections. Chapters on technical disciplines provide details on inspection of protective devices, pipework, storage tanks, heat exchangers, transportable pressure equipment, cranes, lifts, and diesel engines.

TH9705 2003-056278 0-8493-1628-6
Network perimeter security; building defense in-depth.
Riggs, Cliff.
CRC Pr., ©2004 410 p. $79.95
Suitable for both novice and experienced network administrators, this guide explains how to evaluate network security needs, develop a company security policy, and create a budget based on that policy. Riggs (affiliation not cited) also describes various security tools such as firewalls and cryptography and outlines the testing process. He does not extensively cover any particular technology or provide detailed configuration steps for each product. The volume does not contain bibliographical references,

TH9705 2003-14859 0-471-27156-X
Security planning and design; a guide for architects and building design professionals.

Title main entry. The American Institute of Architects. Ed. by Joseph A. Demkin.
John Wiley & Sons, ©2004 240 p. $50.00
Now that terror of terror has eclipsed such selling points as energy efficiency (1970s) and green environments (1980s and 1990s), the guide offers concepts, principles, and processes rather than specific solutions. Among them are understanding threats, planning and evaluating security, building hardening, technologies, biochemical and radiological building protection, emergency operations.

MECHANICAL ENGINEERING & MACHINERY

TJ163 2003-056515 0-88173-362-8
Investment grade energy audit; making smart energy choices.
Hansen, Shirley J. and James W. Brown.
Fairmont Pr., ©2004 194 p. $95.00
Investment grade audits (IGAs) go beyond traditional energy audits, taking into account the conditions in a specific building or process, thereby reducing the level of uncertainty as to how proposed energy efficiency measures will perform over time. In this guide for energy-involved professionals, consultants Hansen and Brown discuss topics such as judging the impact of human behavior, finding the money to implement an IGA, and mitigating facility risks.

TJ211 2003-061957 1-4020-1630-1
Intelligent control of robotic systems.
Katic, Dusko and Miomir Vukobratovic. (Microprocessor-based and intelligent systems engineering; v.25)
Kluwer Academic Pubs., ©2003 294 p. $138.00
Katic and Vukobratovic, both of the Robotics Laboratory at Mihajlo Pupin Institute, Yugoslavia, explain theoretical and application aspects of neural networks, fuzzy logic, genetic algorithms, and hybrid intelligent techniques in robotics. Emphasis is on the development of new efficient learning rules for robotic connectionist training and synthesis of neural learning algorithms for low-level control in the domain of robotic compliance tasks. Several examples are given of applications based on neural and hybrid intelligent techniques. The book will be of interest to a wide audience of engineers, from undergraduate students to practitioners in mechanical and electrical engineering and computer and systems science.

TJ211 0-8247-4072-6
Robot manipulator control; theory and practice, 2d ed.
Lewis, Frank L. et al.
Marcel Dekker, ©2004 614 p. $195.00
An in-depth study of control systems for serial-link robot arms, of interest to both controls engineers and roboticists. Material new to the revised edition includes chapters on commercial robot manipulators and devices, neural network intelligent control, and implementation of advanced controllers on actual robotic systems. The authors (engineers who teach at US universities) note that they intended to write a text for a second course in robotics at the graduate level but that the text has also been used by undergraduate electrical engineering students at the U. of Texas at Arlington.

TJ212 0-7918-3713-0
Dynamic systems and control division, 2003; proceedings; 2v.
ASME International Mechanical Engineering Congress (2003: Washington, DC) (DSC; v.72-1)
ASME, ©2003 1450 p. $500.00 (pa)
The proceedings volume for the Dynamic Systems and Control Division's technical program at the 2003 ASME International Mechanical Engineering Congress (November, Washington, DC) features 178 papers divided into 2 volumes. Four main topics are included in v.1: active control of vibration and noise, adaptive and optimal control, advanced automotive technologies, and advances in robot dynamics and control. Volume 2 contains papers under nine headings: aerospace systems; automated modeling; design-oriented modeling; identification of mechanical systems; intelligent sensors and sensor networks; intelligent systems; nanoscale dynamics, sensing, and control; and system dynamics. Topics of individual papers include fuzzy control of a resonant vibration dryer, design of wearable power assist device, force control of linear motor stages for microassembly, tuned modal control of a space-based deployable manipulator, and position/rate haptic control of a hydraulic forklift. Each paper includes an abstract and list of references. An author index is included; there is no subject index.

TJ213 2003-062629 1-4020-7607-X
Advances in automatic control.
Title main entry. Ed. by Mihail Voicu. (The Kluwer international series in engineering and computer science; SECS 754)
Kluwer Academic Pubs., ©2004 444 p. $180.00
Voicu (Technical University "Gheorghe Asachi" of Iasi) presents recent work in the field, in areas such as stabilization of distributed parameter systems, disturbance attenuation in stochastic systems, analysis and simulation of discrete event systems, fault detection, characterization of linear periodic Hamiltonian systems, stability of time delay systems, flow invariance and componentwise asymptotic stability, robot and CIM control, DVD player control, and distributed control. Specific topics covered include a new computational approach for the design of fault detection and isolation filters, robots for humanitarian demining, and the dynamic control of hyper redundant manipulators. There is no subject index.

TJ216 0-8247-4869-7
Robust control system design; advanced state space techniques, 2d ed.
Tsui, Chia-Chi. (Control engineering series)
Marcel Dekker, ©2004 321 p. $165.00
Tsui (DeVry Institute of Technology) introduces a new design approach to modern control systems that uses generalized state feedback control to achieve the robustness of feedback control systems without compromising the system's performance. Among the developments are the solution to a fundamental matrix equation, the generation of a state feedback control signal without explicit state estimation, the design of minimal order observers, the eigenstructure assignment, and the design of failure detection. The second edition of the textbook highlights effective designs for high performance.

TJ217 1-55617-857-3
Models unleashed; virtual plant and model predictive control applications.
McMillan, Gregory K. and Robert A. Cameron.
Instrument Soc. of America, ©2004 165 p. $49.00 (pa)
This pocket (3.5x5.5²) guide provides insight into plant control implementation practices to perform after objectives have been defined and technology decisions have been made. Concepts, procedures, and examples are described that will help engineers construct and apply first-order and first-principle models using software for simulation and model predictive control. McMillan is an innovator in automation and control technologies, and Cameron is a process control engineer in the private sector.

TJ930 3-527-30635-8
Industrial pigging technology; fundamentals, components, applications.
Hiltscher, G. et al.
Wiley-VCH, ©2003 334 p. $195.00
Pigs are snug-fitting plugs, which are able to perform various maintenance tasks such as cleaning or removing deposits or blockages in pipe and pipeline systems from the inside. This introductory text for engineers and chemists describes the design of pigging systems as well as the functions of their individual components. A sampling of topics includes the requirements for piggable pipes, the speed behavior of gas-driven pigs, and the applications of pigging in the chemical industry. Issues of safety and occupational health are also discussed.

TJ1051 1-55617-859-X
Variable speed drives; principles and applications for energy cost savings, 3d ed.
Spitzer, Daniel William.
Instrument Soc. of America, ©2004 204 p. $65.00 (pa)
Presents criteria and data to help engineers compare the cost and efficiency of variable-speed controls on rotary equipment against other types of control elements. The author reviews relevant electrical and hydraulic information, explores the calculation of utility costs, and overviews several applications of control valves, alternate final control elements, and variable frequency drive technology. No index is provided.

TJ1075 0-7918-0206-X
Lubrication and lubricant selection; a practical guide, 3d ed.
Landsdown, A.R.
ASME, ©2004 285 p. $125.00
Focusing on the importance of viscosity, this guide characterizes the various materials that are placed between moving surfaces to reduce friction and prevent overheating, and identifies factors to consider when deciding whether a component should be lubricated with an oil, grease, solid, or gas. Later chapters discuss sealing, monitoring, handling, and safety. The third edition reflects changes in testing, specifications, and regulations.

TJ1280 0-87849-933-4
Advances in abrasive technology 6.
Title main entry. Ed. by Thomas Pearce et al. (Key engineering materials; vs. 257-258)
Trans Tech Publications, ©2004 589 p. $195.00
Pearce (University of Bristol) presents information for researchers and engineers in the field of abrasive technology in this compilation of selected papers from a November 2003 conference. Topics covered include the mechanics of grinding processes, grinding and cutting of brittle materials, precision and surface-quality enhancement, grinding wheels, cooling and coolants, advances in truing and dressing for grinding, polishing, micro-machining, and novel abrasive and machining techniques. Within each topic, novel designs in systems and machine tools and new techniques and processes are described. Modeling and characterization of the characteristics and performance of abrasive processes are also discussed. The book is distributed by Enfield.

ELECTRICAL ENGINEERING, ELECTRONICS

TK2182 0-471-44506-1
Electrical insulation for rotating machines; design, evaluation, aging, testing, and repair.
Stone, Greg C. et al.
Wiley-IEEE Press, ©2004 371 p. $99.95
Covering all aspects of the design, deterioration, testing, and repair of the electrical insulation used in motors and generators, this reference provides both historical background important to understanding machine insulation design and up-to-date information on new machines and how to select insulation systems for them. Detailing some 30 different rotor and stator winding failure processes and reviewing 25 different tests and monitors used to assess winding insulation

condition, the book will help machine users reduce maintenance costs and avoid unnecessary machine failures. Stone is a dielectrics engineer working in the private sector.

TK30012003-055214 0-8493-1791-6
Electric power distribution handbook.
Short, T.A. (Electric power engineering series)
CRC Pr., ©2004 773 p. $169.95
This reference provides information on the electrical aspects of power distribution systems. It first takes an in-depth look at equipment and applications and explores reliability and power quality issues, then tackles lightning protection, grounding, and safety. A final chapter, on distributed power generation, will help utilities avoid the problems inherent in the introduction of distributed generation systems. Focus is on utility-style distribution systems with typical voltages up to 35 kV. Tips and solutions for solving problems and improving performance are provided, and numerous tables, graphs, methods, and statistics useful to distribution system engineers are included. Author information is not given.

TK51022003-17989 0-321-20068-3
Enterprise integration patterns; designing, building, and deploying messaging solutions.
Hohpe, Gregor and Bobby Woolf. (Addison-Wesley signature series)
Addison-Wesley, ©2004 683 p. $44.99
Hohpe, an expert in enterprise integration, and Woolf, an author of technical books and articles, provide a catalog of 65 patterns and real-world solutions for asynchronous messaging. Providing a consistent vocabulary and visual notation framework to describe large- scale integration across many technologies, the book presents practical advice on designing code and managing, monitoring, and maintaining a messaging system, useful for application and integration architects and developers and enterprise architects.

TK51022003-59230 1-4020-7660-6
Turbo codes; desirable and designable.
Giulietti, Alexandre et al.
Kluwer Academic Pubs., ©2004 150 p. $110.00
Turbo coding holds potential in the field of wireless communication; it could be used as the major error control technique for 4G, broadband satellite communication, advanced power line communication, and other applications where coding gain is critical. However, drawbacks such as high latency, low decoding speed, and high decoding complexity hamper its use. The authors (three engineers associated with the Interuniversitary Micro-Electronics Center, Leuven, Belgium, and Genius Institute of Technology, Brazil) analyze algorithmic and architectural bottlenecks in creating high-speed turbo codes and point out solutions along with a design for a high-speed, low-power turbo codec ASIC. They write with esprit about their topic if not always with standard English or careful proofreading.

TK51032003-64007 1-4020-7712-2
Ad hoc wireless networking.
Title main entry. Ed. by Xiuzhen Cheng et al. (Network theory and applications; v.14)
Kluwer Academic Pubs., ©2004 621 p. $165.00
Ad hoc wireless networking is a technique to support robust and efficient operation on mobile wireless networks. Cheng (Computer Science, The George Washington University) presents material dealing with various issues related to ad hoc wireless networking, including energy efficient ad hoc routing, location discovery in sensor networks, wireless security, and routing challenges in large scale ad hoc networks. Each chapter is self-contained, and written to be accessible to both experts and non-experts. Specific topics covered include applications of computational geometry in wireless networks, hybrid routing, and scalability of routing in ad hoc networks. There is no subject index.

TK51032003-058856 1-4020-7587-1
Digital transmission systems, 3d ed.
Smith, David R.
Kluwer Academic Pubs., ©2004 808 p. $153.00
Providing a comprehensive overview of the theory and practices of digital transmission systems used in digital communication, this volume contains discussions on system design, analog-to-digital conversion, time-division multiplexing, baseband transmission, digital cable systems, fiber optic transmission, digital radio, network timing and synchronization, and digital transmission networks. The book is illustrated with numerous tables and figures, and examples are drawn from common carriers, manufactures, and commercial systems. Smith teaches electrical engineering and computer science at George Washington University.

TK5103 0-8247-4711-9
Domain-specific processors; systems, architectures, modeling, and simulation.
Title main entry. Ed. by Shuvra S. Bhattacharyya et al. (Signal processing and communication; 20)
Marcel Dekker, ©2004 261 p. $165.00
Thirty-five international researchers and academics contribute 12 chapters on various levels of abstraction found in embedded systems and software design, from low-level application and architecture optimizations to high-level modeling and exploration concerns, and specializations in applications, architectures, and mappings. A sampling of topics: automatic VHDL model generation of parameterized FIR filters, highly efficient scalable parallel- pipelined architectures for discrete wavelet transforms, stride permutation access in interleaved memory systems, modeling intra-task parallelism in task-level parallel

embedded systems, goal-driven reconfiguration of polymorphous architectures, and communication services for networks on chip.

TK51032003-056315 1-4020-1452-X
Quantum communication and information technologies.
NATO-ASI on Quantum Communications and Information Technologies (2002: Ankara - Antalya, Turkey) Ed. by A.S. Shumovsky and V.I. Rupasov. (NATO science series. Series II: Mathematics, physics, and chemistry; v.113)
Kluwer Academic Pubs., ©2003 349 p. $137.00
This book contains papers based on lectures delivered at a June 2002 meeting on quantum communications and quantum information processing and their implementation, reflecting recent work in quantum teleportation and quantum communication channels based on the use of entangled states. Some areas covered include Schmidt-mode analysis of entanglement for quantum information studies, quantum metrology and quantum information processing with hyper-entangled quantum states, optimal manipulations with quantum information, resonance quantum optics of photonic crystals, and photonic crystals for communications. Other subjects are coherence and superfluidity in atomic gases, quantum imaging, and multipole radiation in quantum domain.

TK51032003-048822 0-13-021435-3
Wireless communication systems; advanced techniques for signal reception.
Wang, Xiaodong and H. Vincent Poor. (Prentice Hall communications engineering and emerging technologies series)
Prentice Hall PTR, ©2004 682 p. $96.00
Wang (Columbia University) and Poor (Princeton University) present recent developments in explicit algorithms for performing advanced processing tasks arising in receiver design for emerging wireless systems. They describe receiver techniques for key signaling environments—such as multiple-access, MIMO, and OFDM systems—as well as methods that address unique physical issues present in many wireless channels, including fading, impulsive noise, and co-channel interference. Individual chapters address specific types of multiuser detection, the treatment of systems involving time- selective fading and multiple carriers, and receiver signal processing based on Monte Carlo Bayesian techniques.

TK51052003-112704 0-7695-2050-2
Applications and the Internet workshops (SAINT 2004); proceedings.
International Symposium on Applications and the Internet Workshops (2004: Tokyo, Japan) Spons. By IEEE et al.
Computer Society Press, ©2004 719 p. $237.00 (pa)
Collects 108 papers delivered at nine workshops held during the January 2004 symposium on internet computing, technologies, software, services, and applications. The workshops examine e- business, IP version 6, healthcare communication systems, metadata applications on broadband networks, service-oriented computing, cyberspace infrastructures, peer-to-peer internetworking, Grid computing, and ubiquitous services. Topics include a comparison of electronic payment systems, DNS transport size issues in IPv6 environments, a wireless recovery protocol for disaster information systems, scenario-based modeling for smart media design, and a method to mitigate routing misbehavior in rational nodes. No subject index is provided.

TK51052003-101908 0-7645-4048-3
Firewalls for dummies, 2d ed.
Komar, Brian et al. (For dummies)
John Wiley & Sons, ©2003 411 p. $24.99 (pa)
Two consultants and a security trainer explain how firewalls work, offer advice on evaluating risk, and make suggestions for choosing the right firewall. The guide begins with the why's and how's, followed by discussions of security policy, network configuration design, specific firewall products, and other tools and resources.

TK65752000-029989 1-891121-22-7
Radar foundations for imaging and advanced concepts.
Sullivan, Roger J.
SciTech Publishing, ©2004 475 p. $89.00 (pa)
Treating radar in a mathematical, quantitative fashion, Sullivan (Institute for Defense Analyses) introduces the fundamentals of imaging radar and proceeds to derive more advanced concepts. Pulse-Doppler and moving target indication radar are covered before discussion of special radar topics, including space-time adaptive processing, bistatic and low probability of intercept radar, weather radar, and ground- penetrating radar.

TK78672003-058062 1-4020-7502-2
The electronic design automation handbook.
Title main entry. Ed. by Dirk Jansen et al.
Kluwer Academic Pubs., ©2003 675 p. $148.00
Primarily addressing the practicing engineer using electronic design automation (EDA) to building system-on-chip modern electronics, Jansen (director, ASIC Design Center, U. of Applied Sciences, Germany) seeks to cover the entire interdisciplinary range of knowledge needed to design, model and verify, and implement modern integrated circuits. After covering basic conceptual material, he offers chapters on symbolic and high level language design; graphical specification of system behavior; hardware/software codesign; circuit verification; analog, digital, and mixed signal simulation; system simulation; formal verification; design for testability; programmable logic devices;

and implementation of a range of technological devices.

TK7868 1-55899-706-7
Flexible electronics—materials and device technology; proceedings.
Symposium on Flexible Electronics—Materials and Device Technology (2003: San Francisco, CA) Ed. by Norbert Fruehauf et al. (Materials Research Society symposium proceedings; v.769)
Materials Research Society, ©2003 386 p. $99.00
Fifth-two papers from the April 2003 symposium present some results of investigating flexible substrates, thin film transistors, organic semiconductor materials and devices, flexible displays, low temperature silicon processing, and electronic textiles. Invited papers discuss organic electronics for large area electronic devices, ultra thin flexible glass substrates, and light emitting polymer materials. Other topics include a method for making elastic metal interconnects, molecular dynamics simulation of germanium nanoparticles, an inverter woven from flat component fibers, and electrical and spectroscopic techniques for life time prediction of organic-based systems.

TK7870 0-8247-4102-1
Lead-free soldering in electronics; science, technology, and environmental impact.
Title main entry. Ed. by Katsuaki Suganuma.
Marcel Dekker, ©2004 342 p. $165.00
Suganuma (Institute of Scientific and Industrial Research, Osaka University, Japan) presents material assessing the scientific and technological aspects of lead-free soldering and considering the necessary background and requirements for proper alloy selection. Serving as a reference for those interested in promoting environmentally conscious electronic packaging practices, including engineers, researchers, and students, the book describes metallurgical and mechanical properties, plating and processing technologies, and evaluation methods vital to the production of lead- free solders in electronics. Material on basic theories governing materials behavior is supplemented with practical information on alloy reliability useful for engineers in charge of the production line.

TK78722003-65695 1-4020-7663-0
Energy scavenging for wireless sensor networks; with special focus on vibrations.
Roundy, Shad et al.
Kluwer Academic Pubs., ©2004 212 p. $120.00
Roundy (University of California-Berkeley) reports on a research project to explore alternative power methods for wireless sensor nodes. Models and designs presented here will enable the application of vibration-based generators in wireless sensor applications. An introductory chapter examines the potential of a range of energy scavenging methods, while the remainder of the book focuses on vibrations as a power source. Commonly occurring vibrations are evaluated for the amount of power that could be scavenged from them, and different methods of converting the kinetic energy inherent in the vibrations are compared. Both piezoelectrical and electrostatic MEMS generator devices are discussed.

TK78742003-066295 1-4020-7657-6
Noise analysis of radio frequency circuits.
Mehrotra, Amit and Alberto Sangiovanni-Vincentelli.
Kluwer Academic Pubs., ©2004 184 p. $115.00
Traditionally, linear perturbation analysis has been the main technique adopted by tools for noise analysis, which has been a complex task requiring deep understanding of physics and of numerical techniques. Reporting on their own research, Mehrotra (U. of Illinois-Urbana-Champaign) and Sangiovanni-Vincentelli (U. of California) introduce novel numerical techniques based on stochastic differential equations, and models for behavioral simulation. The result, they claim, is rigorous and mathematically elegant techniques for noise analysis in systems that transmit and receive signals between 900 MHz to 2.4GHz.

TK78742003-059229 1-4020-7534-0
Power distribution networks in high speed integrated circuits.
Mezhiba, Andrey V. and Eby G. Friedman.
Kluwer Academic Pubs., ©2004 280 p. $143.00
The advancement of high clock speeds and density of integrated circuits has led to greater challenges in power distribution. This monograph, based on the doctoral research conducted by Mezhiba under the supervision of Friedman at the U. of Rochester, is intended as a broad treatment of power distribution networks. A secondary goal is to describe the effects of inductance on the impedance characteristics of power distribution circuits and related circuit behavior.

TK78752003-015993 1-903996-47-3
Microsystems technology; fabrication, test and reliability.
Title main entry. Ed. by Jumana Boussey.
Kogan Page Ltd., ©2003 295 p. $140.00
This collection describes the techniques most commonly used in microsystem fabrication, evaluates the techniques through case studies of the major applications on the market, and overviews methods for designing and testing micro-electrical mechanical systems (MEMS). The contributors compare microelectronic and microsystem technologies, walk through the steps in the surface micromachining process, and outline the basic topology of electrostatic microactuators. Other topics of the 12 papers include the LIGA microfabrication technique, wafer bonding, and permanent magnets for MAGMAS. Originally published in French as *Microsystem technology* in

2002 by Hermes Science Publications. Distributed by Stylus Publishing.

TK78752003-055884 1-4020-7620-7
Optimal synthesis methods for MEMS.
Title main entry. Ed. by G.K. Ananthasuresh. (The Kluwer international series in microsystems)
Kluwer Academic Pubs., ©2003 320 p. $145.00
The field of MEMS, microelectromechanical systems, has evolved from an obscure sub-discipline to an "enabling technology" for miniaturized integrated devices in diversely profitable areas including optical projection displays, telecommunications, and medicine. As the foreword writer—a former professor of his—points out, Ananthasuresh (U. of Pennsylvania) has contributed to the systemization of the generation of optimized designs. The editor explains synthesis vs. analysis and optimization as a synthesis tool. The representative synthesis problems and methods treated in these ten contributed chapters aim to reduce reliance on human designers by automatically generating designs to meet user specifications.

TK78822003-059232 1-4020-7651-7
Computational algorithms for fingerprint recognition.
Bhanu, Bir and Xuejun Tan. (Kluwer international series on biometrics; 1)
Kluwer Academic Pubs., ©2004 191 p. $117.00
The authors (both of the U. of California at Riverside) present a number of new computer algorithms for use in fingerprint recognition systems. They introduce a learned template based fingerprint minutiae extraction approach and use it to construct indexing and verification techniques. They then present a "Genetic Programming" based fingerprint classification technique and compare it to the indexing technique. Finally estimation methods for assessing fingerprint recognition system performance are described.

TK78952003-62733 1-4020-7690-8
Embedded system design.
Marwedel, Peter.
Kluwer Academic Pubs., ©2003 241 p. $115.00
Embedded systems are information processing systems embedded into products such as cars, telecommunication, or fabrication equipment. Marwedel (computer science, University of Dortmund, Germany) provides material for a first course on embedded systems for third-year students in computer science, computer engineering, and electrical engineering who have a basic knowledge of computer hardware and software. Chapters cover specifications, SDL, UML, VHDL, embedded system hardware, embedded operating systems and middleware, hardware and software design in implementing embedded systems, and validation.

TK78952003-061871 1-4020-7589-8
Fault injection techniques and tools for embedded systems reliability evaluation.
Title main entry. Ed. by Alfredo Benso and Paolo Prinetto. (Frontiers in electronic testing; 23)
Kluwer Academic Pubs., ©2003 241 p. $115.00
Fault Injection is a technique that artificially accelerates the occurrence of faults in digital systems until they are close enough together in time that the system's reliability can be evaluated on a shorter time scale than decades. Scientists and engineers mostly from Europe first discuss the general features and advantages of Fault Injection. Then they describe three methodologies and related tools within each of the three main approaches: hardware-based, software-implemented, and simulation-based. A final chapter explores possible solutions to speed-up simulation-based experiments, but the guidelines provided can be applied to other Fault Injection techniques as well. There is no index.

TK8320 0-8247-4716-X
Semiconductor and metal nanocrystals; synthesis and electronic and optical properties.
Title main entry. Ed. by Victor I. Klimov. (Optical engineering; 87)
Marcel Dekker, ©2004 484 p. $165.00
Klimov, a nanotechnology researcher at Los Alamos National Laboratory, assembles the latest work on topics that impact the field of semiconductor and metal nanocrystals, including synthesis and assembly of nanocrystals, theory and spectroscopy of interband and intraband optical transport in nanocrystal assemblies, and physical and engineering aspects of nanocrystal-based devices. Focusing specifically on nanocrystals generated through chemical techniques, the book is organized into two sections on nanocrystal quantum dots and metal nanocrystals, with chapters on areas such as synthesis and optical properties of quantum dot arrays, synthesis and fabrication of metal nanocrystal superlattices, and optical spectroscopy of surface plasmons in metal nanoparticles.

AERONAUTICS, ASTRONAUTICS

TL509 2002-032551 0-7680-0915-4
The standard handbook for aeronautical and astronautical engineers.
Title main entry. Ed. by Mark Davies.
Soc./ Automotive Engin'rs, ©2003 1831 p. $175.95
Davies (head, Department of Mechanical & Aeronautical Engineering, University of Limerick, Ireland) presents reference information on most areas (except military applications) related to aerospace, from basic engineering science and mathematics to astrodynamics, illustrated with diagrams, charts, and graphs. After a look at what the future may hold for the development of aeronautical and space systems, the book reviews

basic engineering science and mathematics that are the foundation of aerospace operations and design, then covers microprocessors and instrumentation, aeronautical propulsion, rockets and launch vehicles, aerospace structures, performance and control, aeronautical design, astrodynamics, spacecraft, Earth's environment and space, and aircraft safety and maintenance.

MINING ENGINEERING

TN698 2003-064018 0-8247-4308-3
Handbook of mechanical alloy design.
Title main entry. Ed. by George E. Totten et al. (Mechanical engineering; 164)
Marcel Dekker, ©2004 734 p. $235.00
Totten, president of the International Federation for Heat Treatment and Surface Engineering, provides a review of the effects of alloy compositional design on expected mechanical properties, highlighting the design elements that must be considered in risk-based metallurgical design. The book begins with a review of elements of the design process, especially the risk-based design process, then presents information on microstructure and mechanical property design features as a function of alloy composition. The book will be useful as a reference for mechanical, metallurgical, and materials engineers and designers, and can be used as an advanced undergraduate and graduate level text.

CHEMICAL TECHNOLOGY

TP321 2003-49604 0-8031-2096-6
Fuels and lubricants handbook; technology, properties, performance, and testing. (CD-ROM included)
Title main entry. Ed. by George E. Totten et al. (ASTM manual series; MNL 37)
ASTM International, ©2003 1087 p. $325.00
While other books deal with various aspects of fuels and lubricant chemistry and applications, few focus on testing and provide coverage of fluid properties and testing methodologies together. And, while testing standards publications are abundant, such publications don't deal with the principles behind the tests. This handbook—useful as a stand-alone reference or as a companion to the annual *ASTM Book of Standards*—provides an overview of testing methodologies as well as the applications-related properties being tested. It comprises 38 contributions arranged in sections on petroleum refining processes for fuels and lubricant basestocks; fuels; hydrocarbons and synthetic lubricants; and performance/property testing procedures. Nineteen pertinent ASTM standards are provided on the accompanying CD-ROM. Editor Totten is a consultant specializing in thermal processing and industrial lubrication problems and equipment supply.

MANUFACTURES

TS171 1-86058-427-6
Design and manufacture for sustainable development 2003; proceedings.
Conference on Design and Manufacture for Sustainable Development (2003: Cambridge, UK)
Ed. by Bernard Hon.
Professional Engineering Pub., ©2003 300 p. $561.00
Papers from a September 2003 conference report on recent advances in the application of sustainable technologies to design and manufacture. Some areas discussed include life cycle engineering, biodegradable plastics for hygienic disposable products, assessment for product sustainability, laser technology applied to sustainable demolition and re-usable bricks, and sustainability principles for product design. Beyond the technical side, papers address issues in mechanical engineering education for sustainability, the role values play in designer decisions and how this affects ecodesign outcomes, and the ways in which public perceptions of sustainability, energy efficiency, and recycling can inform the design process. Other topics examined include assessing the impact of development initiatives on rural textile producers, the potential for vehicle weight reduction using a new ductile cast iron, and a process selection system for the separation of insoluble connections. There is no subject index. The book is distributed in the US by ASME.

UG590 1-58053-743-X
Modern communications jamming principles and techniques.
Poisel, Richard A. (Artech House information warfare library)
Artech House, ©2004 479 p. $119.00
A scientist in intelligence and information warfare for the US Army offers a technical reference for engineers and scientists working in communication jamming. He focuses mostly on military applications, but notes that jamming and anti-jamming concerns are spreading to such commercial industries as cellular telephone systems and wireless local area networks. After filling in background on jamming and radio propagation, he considers such topics as signaling for anti-jam communications, linear feedback shift registers and linear recursive sequences, synchronization and tracking in spread-spectrum systems, and jamming techniques. He assumes readers understand calculus and communication theory and systems at the level of undergraduates in engineering and physics.

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